TEXTILE TECHNOLOGY DIGEST

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Abstracts

ORGANIC FIBERS I

Textile fibers. Industrial textile fibers. J. F. Hagen, Callaway Mills. *Am. Wool Cotton Reptr. 61,* 15-16 (July 17, 1947).

In a lecture, textile fibers are discussed with respect to their possibilities in industrial uses. A brief review of the properties of the various fibers is given. TTD: 10-48

Warmth of clothing. The warmth of clothing. A. B. D. Cassie. *Textielwezen 4,* 45-8 (Jan. 1948).

The warmth and flexibility of clothing comes from its fiber structure. The enormous total surface of fiber exposes the fiber material to close contact with the atmosphere. The solid surfaces maintain the air within the fabric at rest to give maximum heat insulation with minimum weight, while an extensive exposure of the solid material to the air gives immediate heat and water vapor exchange with the air. The result of this exchange is a thermostatic action that delays the onset of a change in temperature. Flexibility, heat insulating, and thermostatic action are the most important factors influencing the warmth and comfort of clothing.
WGM TTD: 10-48

MATTHEW'S TEXTILE FIBERS; their physical microscopical and chemical properties. . . . 5th ed. Prepared by a staff of specialists under the editorship of H. R. Mauersberger. New York, John Wiley & Sons, Inc.; London, Chapman & Hall, Ltd. 1947; 1133 pp.; price $12.50.

Reviewed in *J. Textile Inst. 38,* P631 (Dec. 1947). TTD: 10-48

WORLD FIBER SURVEY. Gerda Blau. Food & Agriculture Organization of the United Nations, Washington. 176 pp.; price $1.00.

Reviewed in *J Textile Inst. 38,* P448-49 (Sept. 1947). TTD: 10-48

Vegetable fibers I 1

Cellulose. Cellulose studies. X. Heterogeneous degradation of cellulose and viscose rayon in organic acid solutions. P. C. Mehta & Eugene Pacsu, Textile Foundation & Princeton Univ. *Textile Research J. 18,* 387-95 (July, 1948).

Results of experiments on the heterogeneous hydrolysis of surgical cotton and viscose rayon by organic and inorganic acids show an initially rapid hydrolysis that comes to a standstill when the D. P. [degree of polymerization] has reached about 250 for cotton and 60 for rayon. A negative entropy value as calculated from Eyring's equation is also shown. These results partly confirm the theory that cellulose consists of units of glucopyranose residues connected by glycosidic bonds, and these units are inter-connected by hemiacetal bonds (For Parts I-IX, see TTD: *3,* 1, 301, 430, 471, 525; *4,* 33; *5,* 47). TTD: 10-48

Cotton fiber. Cotton—a versatile textile fiber; meeting the modern challenge. H. Martin-Leake. *Fibres 9,* 225-26 (June, 1948).

The characteristics of the cotton fiber are discussed generally. The influence of environment on the spinning qualities of fibers is also mentioned. TTD: 10-48

Evaluation of cotton. Problems relating to the evaluation of cotton. G. Raes, Univ. of Ghent. (In French, with an English summary). *Textielwezen 4,* 63-71 (July, 1948).

Length, fineness, maturity, and strength and their methods of measurement are discussed. Some work on the characteristics of certain varieties of cotton by Raes and De Meulemeester, published by the Natl. Inst. for Agronomy of the Belgian Congo, is summarized. The need for precaution in making tests and in interpreting the results is emphasized. TTD: 70-48

Fiber extraction. Hiparol and bacterial pectinases; use for fibre extraction and allied purposes. Parkutty Baruah & H. K. Baruah. *Fibres 9,* 128-30 (Apr. 1948).

The use of Hiparol and bacterial enzymes preparations in the extraction of fibers from plant material, especially bast fibers, is discussed. The process as applied to jute, flax, ramie, and coconut coir is noted. Hiparol is a mixture of enzymes extracted from *Thielaviopsis paradoxa,* a tropical fungus. Equal portions of Hiparol and pectinases

from *Bacillus caratovorius* are combined to form a compound mixture. Results of large-scale experiments with jute, now being carried out, will be reported in future papers. TTD: 10-48

Flax industry. Belgian and Northern Ireland flax industries compared; the Development Committee's Report. Anon. *Fibres 9*, 168-9 (May, 1948).

Differences in the methods employed in the flax industries of Belgium and Northern Ireland are described and discussed. The observations were made by a delegation of the Northern Ireland Flax Development Committee on a visit to Belgium in July, 1947. The 2 fundamental differences noted were: 1) the heavy application of manure and fertilizers in Belgium, resulting in good soil fertility and high seeding rates with higher yields, and 2) the high degree of interest of the Belgian worker in his labor. Retting and hand finishing are also discussed. TTD: 10-48

Flax industry. Australia tackles the task of establishing a permanent flax-growing industry. Anon. *Fibres, Fabrics & Cordage 15*, 21, 19 (Jan. 1948).

The Flax Research Laboratory of the Council for Scientific and Industrial Research, located at Highett, Australia, is engaged in research on (a) increasing yield of Australian flax and (b) improving its quality. The Research Laboratory is equipped with an experimental rettery and spinning machinery. TTD: 10-48

Jute fiber. The acid nature of jute fibre. P. B. Sarkar, H. Chatterjee & A. K. Mazumdar. *J. Textile Inst. 38*, T318-32 (Sept. 1947).

The acid value of jute was measured by modifications of the Neale and Stringfellow, iodometric, and silver salt methods. The values obtained more or less agreed. The acidity of the fiber is chiefly due to the presence of carboxylic compounds and not to absorbed HC1 used in removing the cationic ash. Measurement of uronic CO_2 indicated that the acidity of jute was due mainly to uronic acids which appeared to be combined with pentosans or hexosans. Alpha cellulose from jute showed a small acid value. The acid value of jute fiber has no close relationship to its spinning quality. 33 references. TTD: 10-48

Paper-making. Fibres in paper-making. Anon. *Fibres 8*, 374-79, 422-23, *9*, No. 1, 29-30 (Nov.-Dec., 1947, Jan. 1948).

The paper-making process is briefly described. The chief fibrous materials used in making paper

are discussed and their natural properties of interest in paper making are given. Cotton, linen, hemp, jute, esparto, straw, bamboo, sisal, and waste paper are included. The final article discusses wood pulp. TTD: 10-48

Ramie. The culture and preparation of ramie fibers. J. Raas, Consultant to the Govt. of the Netherlands. *Textielwezen 4*, 31-40 (July, 1948). (In Flemish with French and English Summaries.)

The culture of ramie requires little capital, but a good soil and high rainfall are necessary. Java produces high-grade fiber, but American ramie is unsatisfactory because the industry is too highly mechanized. It is predicted that the demand for ramie will increase when its specific qualities are better known. It has been shown that ramie fibers can be made into useful textile yarns with superior qualities. Belgium and the Netherlands should be able to produce and manufacture this material profitably. TTD: 10-48

Ramie. Characteristics and properties of ramie fibers. L. Van Iseghem, Director of Textilabor. *Textielwezen 4*, 41-55 (July, 1948). (In French, with English and Flemish summaries.)

The history of ramie manufacture is reviewed and the properties of the decorticated and the degummed fibers are compared. Ramie is especially useful in making thread resistant to bacterial decomposition and where light weight and high strength are needed. TTD: 10-48

Ramie. Ramie: 1947. Earle L. Rauber. *Monthly Review, Federal Reserve Bank of Atlanta 32*, 81-6 (July 31, 1947).

The ramie industry in the South, which was in the experimental stage only 2 years ago, is now in the developmental stage. The status of the industry is reviewed and the technical difficulties confronting it are discussed. There are technical difficulties involved in the decortication of ramie which increase the risk involved. The industry has a bright future, but many problems remain to be solved. TTD: 10-48

CONTRIBUTION TO THE PHYSICS OF CELLULOSE FIBRES. P. H. Hermans, Institute of Cellulose Research, Utrecht. Elsevier (London agents: Cleaver-Hume). 220 pp. 19s. In English.

Reviewed in *Fibres 9*, 66 (Feb. 1948). TTD: 10-48

THE EVOLUTION OF GOSSYPIUM. J. B. Hutchinson, R. A. Silow and S. G. Stephens. Geoffrey

Cumberlege: Oxford University Press, 1947. 15s.

Reviewed in *Fibres 9*, 28 (Jan. 1948). TTD: 10-48

HERITAGE OF COTTON. M. D. C. Crawford. Rev. ed. Fairchild Publishing Co., New York, 1948; 294 pp.; price $3.00.

Reviewed in *Textile Research J. 18*, 440 (July, 1948). TTD: 10-48

LONG VEGETABLE FIBERS. Ludwig Weindling. Columbia Univ. Press, New York, 1947; 311 pp.; price $5.00.

Reviewed in *Textile Research J. 18*, 441 (July, 1948). TTD: 10-48

Artificial fibers — I 3

Artificial fibers. New developments in using artificial fibers. C. van Thourout. *Textielwezen 4*, 29-34 (Apr. 1948). (In Flemish, with English and French Summaries.)

The speaker pointed out that improvements in fineness, flexibility, and other physical qualities of viscose and acetate rayon were important factors in the wider use of these fabrics. The future belongs to first-rate products. New protein fibers were also discussed. TTD: 10-48

Artificial fibers. Annual synthetic fiber survey. Wm. B. Dall. *Textile World 98*, 103, 119 (Sept. 1948).

Most of the postwar expansion in the U. S. has been realized and production gain for 1948 over 1947 is expected to be about 18%. The added capacity visualized for 1949 is considered inadequate for the growing demand. Nylon and other new fibers are active but are still small in volume compared to rayons. General discussions of industrial uses of various synthetic textile fibers are included. TTD: 10-48

Crimped rayon staple. Crimped rayon staple use grows. Anon. *Am. Wool Cotton Reptr. 62*, 15-16 (Apr. 15, 1948).

Crimped viscose rayon staple has all the advantages of rayon staple plus a permanent wave approximating the curl in wool. The fibers have an increased cohesion that aids in their blending, gilling, combing, and drawing. The crimp keeps the fiber from matting and makes fabrics more resistant to ravelling at the seams when laundered. Crimped rayon staple is being used in blankets, suitings, dress goods, shirtings, and upholstery fabrics. TTD: 10-48

Flowing viscous liquids. Apparatus for flowing viscous liquids, including a by-pass between a pump outlet and the liquid chamber. Geo. S. Pyles. USP 2 443 146, June 8, 1948.

For flowing viscous or colloidal liquids onto the surfaces where they are to be used, a fluid-actuated piston exerts a pressure on the solution contained in a pressure pot, thereby forcing the solution into the intake of a pump which finally forces it through a delivery hose.
JHB TTD: 10-48

Thread advancing reel. Thread-advancing reel. Richard W. Stanley (to Am. Viscose Corp.). USP 2 431 712, Dec. 2, 1947.

A thread-advancing reel used in production of a yarn store continuously advanced and subjected to fluid treatment, comprises 2 sets of thread-carrying bars mounted eccentrically to effect an alternate protrusion and recession of the bars, thereby advancing the thread longitudinally along the reel.
JHB TTD: 10-48

Thread guide. Thread guide. Seddon C. Nelson (to Am. Viscose Corp.). USP 2 440 151, Apr. 20, 1948.

In artificial filament spinning, a fixed or stationary thread guide has a plurality of operating positions and is adjustable to present a new surface to thread passing thereover, thereby eliminating frequent replacement of said guide.
JHB TTD: 10-48

Thread guide. Self-centering funnel. Seddon C. Nelson (to Am. Viscose Corp.). USP 2 446 301, Aug. 3, 1948.

This invention relates to a thread guide adapted to control the delivery of filaments, yarns, and the like into centrifugal buckets, such as are used for collecting freshly spun filamentary material during their production on artificial filament spinning machines. The principal object of the invention is to provide a self-centering funnel so that, if the funnel should happen to be mounted in an off-center position, it will automatically center itself simply by virtue of the pull of the yarn at the discharge end of the funnel. TTD: 10-48

Rayons — I 3 a

Candle-filter mounting. Candle-filter mounting. Kenneth M. McLellan (to Industrial Rayon Corp.). USP 2 446 979, Aug. 10, 1948.

The conventional type of candle-filter used in viscose rayon production has an opening at its

base through which the viscose enters and another opening at the top of the filter housing through which the filtered viscose passes on to the extrusion point. When the filtering element becomes clogged, it is of course necessary to remove it for cleaning or replacement. Because of the construction of the candle-filter, however, this requires dismantling of the viscose piping system adjacent to the candle-filter. This invention provides a candle-filter which can be permanently mounted in the viscose pipe line and at the same time permits ready removal if it should become clogged. This is accomplished by providing the candle-filter with a new form of mounting or base member having separate inlet and outlet passages communicating with the interior of the candle-filter housing. Use of this devise is not limited to the viscose process. TTD: 10-48

Cutting rayon filament. Cutting apparatus. Seddon C. Nelson (to Am. Viscose Corp.). USP 2 446 097, July 27, 1948.

In this invention, a cutting apparatus is provided in which there is relative motion at high velocity between a knife and a cooperating member which may serve either to guide the material to cutting position or as a cooperating shear member or both. The fiber clumps are subjected to an opening effected by collision at the time of cutting against a projection on the knife and presenting an indented surface composed of corrugations, serrations, notches, and the like. The impact splatters the clump across or along the surface and the indentations assist the action by introducing offset points of impingement of the clump against the obstruction. "By passing the continuous filamentary materials in a wet condition through the apparatus of the present invention, so that the fibers cut are in a somewhat softened or plastic condition, there is obtained the additional desirable characteristic of crimpiness simultaneously with the opening operation so that a subsequent separate step of crimping is unnecessary to better adapt such staple fibers for subsequent textile processes, such as in carding and spinning. In this arrangement, crimping is obtained along with the opening, provided the tow is in a wet or somewhat plastic condition at the time of treatment.

TTD: 10-48

Radioisotopes in rayon production. Chemical process control with radioactivity. Alan P. Schreiber, Tracerlab, Inc. *Nucleonics 2*, 33-41 (Jan. 1948).

The use of radioisotopes in the manufacture of viscose rayon is described and discussed. Radio-

isotopes may be used not only for research purposes, but also for control purposes, e. g. in a liquid level gauge to indicate liquid level in any tank, and to actuate a filling valve when the liquid falls below a predetermined level. Applications of radioisotopes to dye control, static eliminations, and the study of cellulose are also discussed.

TTD: 10-48

Rayon manufacture. Rayon pot spinning improved. Anon. *Am. Wool Cotton Reptr. 62*, 17-18 (Aug. 5, 1948).

Among the new improved features of the Butterworth rayon pot spinning machine are a new traverse system, precision speed controls, spinning compensators, new funnel and pump brackets, etc. The traverse control mechanism is unique in that it has no cams and operates smoothly up to 1½ times the highest speed of cam drives. TTD: 10-48

Rayon manufacture. Rayon manufacture at the the cross-roads. I. Discontinuous spinning by the Topham pot method. II.-III. The continuous spinning process, I.-II. A. J. Hall. *Fibres 9*, 19-23 (Jan. 1948); 62-4 (Feb. 1948); 107-09 (Mar. 1948).

The advantages and disadvantages of discontinuous and continuous spinning for viscose rayon are discussed. The development of methods for purification treatment of cakes without first putting the yarn into skein form is important. The Nelson process for continuous spinning and the process of the Industrial Rayon Corporation are discussed. Yarn spacing devices, used in the continuous process, are described and illustrated with diagrams. Superior yarn is said to be produced by the continuous process, although the presence of chemicals in the yarn, due to incomplete washing, is held by some to be dangerous. TTD: 10-48

Rayon manufacture. The development of continuous rayon spinning. S. W. Barker & R. Alleston. *J. Textile Inst. 39*, P1-20 (Jan. 1948).

This paper, which is a report of a lecture to the Lancashire Section of the Textile Institute at Manchester (England), June 10, 1947, traces the development of continuous rayon spinning, and discusses the various problems involved and the different attempts to solve them. Early patents on which later work was based are considered, and many illustrations from these patents are given.

TTD: 10-48

Rayon manufacture. Continuous spinning of viscose rayon. Anon. *Textile Mfr. 73*, 506 (Nov. 1947).

A review of a paper by S. W. Barker, given be-

fore the Lancashire Section of the Textile Institute, Oct. 6, 1947, is given. The features of the Nelson process for the continuous spinning of viscose rayon are noted briefly. TTD: 10-48

Rayon manufacture. Viscose rayon spinning machines. Anon. *Textile Mfr. 73*, 558-61 (Dec. 1947).

Technical details of the Dobson and Barlow centrifugal viscose rayon spinning machine (Series 5A), and the Nelson continuous spinning machine are given. TTD: 10-48

Rayon manufacture. Process of producing rayon. Arthur Cresswell (to North American Rayon Corp.). USP 2 442 331, June 1, 1948.

In the manufacture of viscose rayon, the formation of incrustations in the spinnerets will be prevented and the spinning behavior improved by the addition of approximately 0.005% of an alkylene oxide, with a degree of polymerization of about 30, but still somewhat soluble and stable in acid baths.
GNR TTD: 10-48

Spinning bucket clutch. Clutch for spinning buckets. Edwin T. Birsch (to Am. Viscose Corp.). USP 2 443 593, June 22, 1948.

An improved means for coupling a spinning bucket to a drive spindle permits the ready attachment or removal of the spinning bucket during rotation of the spindle and assures uniform speed of the spinning box during normal operation.
JHB TTD: 10-48

VISCOSE RAYON TYRE CORD PRODUCTION IN GERMANY. BIOS Information Service Report under S. O. Code No. 51-4275-60. H. M. Stationery Office.

Reviewed in *Fibres 9*, 153 (Apr. 1948).
TTD: 10-48

Protein fibers I 3 b

Protein fiber. Ardil fiber; present position and prospects. Anon. *Fibres 9*, 233-4 (June, 1948).

The present status and immediate outlook of Ardil fiber were reviewed by R. H. K. Thomson, Imperial Chemical Industries, Ltd., recently at Glasgow. The new fiber, which was developed as a substitute for wool, is made from ground nuts (peanuts) obtained from Africa. The protein is extracted by a process including blanching the nut, grinding it into a powder or meal, extracting the oil, dissolving the protein in a dilute caustic soda, and processing the solution to precipitate the

protein. Ardil fiber is very similar to wool and is best utilized in blends of 50% wool/50% Ardil. The fiber burns and smells like wool but may be identified readily under a microscope. TTD: 10-48

Protein fiber. Constitutional factors in production of artificial protein fiber. Sam R. Hoover, Elsie L. Kokes, & Robt. F. Peterson, Eastern Regional Laboratory. *Textile Research J. 18*, 423-35 (July, 1948).

In a review of the recent developments in the chemistry of artificial protein fibers, it is noted that the properties of the fibers are determined by the manner in which the chains of proteins are arranged, by the number and arrangement of the amina acid residues, and by the length of the polypeptide chain. Peptide chain length determinations in proteins by end-group analysis are presented. TTD: 10-48

Protein fiber. Method of dispersing keratin proteins with amides and the composition resulting therefrom. Chase B. Jones & Dale K. Mecham (to U. S. of Am.). USP 2 445 028, July 13, 1948.

The keratin in the form of feathers, hoofs, horn, and wool is heated in an essentially neutral, aqueous solution of a sulfur-containing reductive disulfide-splitting agent and a member of the urea, thiourea, formamide, acetamide, or urethane groups, at a temperature up to 100°C to effect dispersions which may be used to produce artificial fibers.
GHC TTD: 10-48

Protein fiber. Method of dispersing keratin protein with ammonium thiocyanate and the composition resulting therefrom. Chase B. Jones & Dale K. Mecham (to U. S. of America). USP 2 445 029, July 13, 1948.

Keratin materials such as feathers, hoofs, horn, and wool may be heated in an essentially neutral aqueous solution of a sulfur-containing reductive disulfide-splitting agent and ammonium thiocyanate at a temperature up to 100°C to produce dispersions which may be used for producing artificial fibers, films, etc.
GHC TTD: 10-48

Synthetic fibers I 4

Acrylonitrile polymers. Method of treating oriented acrylonitrile structures. Shirleigh Silverman (to E. I. du Pont de Nemours & Co.). USP 2 445 042, July 13, 1948.

An improvement in the physical properties of

shaped articles drawn from acrylonitrile polymers, particularly yarns, may be obtained by heating the shaped article to a temperature of 80°-300°C under conditions which permit relaxation and shrinkage, followed by maintaining the temperature at 80°-300°C for at least one hour under sufficient tension to maintain the shape but not enough to stretch the article. Both steps, in particular the last step, are carried out in the presence of an inert heating medium.

GNR TTD: 10-48

Nylon. Nylon as a reinforcement for worsted yarns. Anon. *Fibres 9*, 102-04 (Mar. 1948), 142 (Apr. 1948).

Methods of combining nylon with worsted yarn are described and discussed. The "doubling" method allows production of worsted -nylon yarn from coarser worsted than is normally employed to produce a normal 2-fold worsted yarn. The "core" or "skeleton" method, utilizing continuous filament nylon, require slight modifications in the plant. The filament nylon is introduced into the yarn during spinning. The "core" method enables the count limit from a given top to be extended, with an increase in effiiciency in weaving and knitting. A table of comparative tests carried out on all worsted and worsted-nylon fabrics of similar characteristics is included. TTD: 10-48

Polystyrene. Stretch orientation of polystyrene and its interesting results. Jas. Bailey, Plax Corp. (Presented before Soc. of Plastics Engineers, Inc., Detroit, Mich., Jan. 21, 1948). *India Rubber World 118*, 225-31 (May, 1948).

Orientation of polystyrene is the cause of many of its peculiar properties. Orientation may be advantageous or detrimental, depending on the amount and the direction, and on the article. Much useful information on manufacturing processes and the strength of the article itself may be obtained from a polariscopic study of orientation and the associated birefringence. Although the mechanism of orientation is not completely understood, it is believed that considerable useful information has been gathered. Very small fibers and very small sheets of polystyrene seem to possess great strength. TTD: 10-48

Synthetic fiber. Nitromethane-acetone-adipic acid condensation polymer. Albin Johnson (to Tek Hughes, Inc.). USP 2 444 827, July 6, 1948.

This patent claims the formation of a resin by the interaction of nitromethane, acetone, and adipic acid in the proportions of 2:2:1 gram molecules. To this mixture is added 0.1% of an inorganic catalyst such as titanium dioxide. The ingredients are stirred and heated gradually until the reaction starts (at 140°-150°C). The temperature is then raised to about 250°C at which temperature a vacuum is applied to remove the water produced and prevent oxidation. The temperature of 250°C, or a little less, is maintained until the mass is of the proper consistency (tested by thrusting a glass rod into the mixture; on withdrawing, the rod should be followed by a string mass adhering to it). The mixture is then poured from the reacting chamber and allowed to cool under normal atmosypheric conditions, then ground to a fine powder and extruded under heat and pressure to form a thread or filament. Such a thread or filament, upon test, shows 80% of the strength of nylon.

GNR TTD: 10-48

Vinyon N. Story of "Vinyon" N; Research behind "Vinyon" N; Properties and types of "Vinyon" N yarns. Anon. *Am. Wool Cotton Reptr. 62*, 57-66 (Apr. 15, 1948).

A review is given of the development and research behind "Vinyon" N yarns, with a discussion of the manufacturing processes involved, the properties and types of yarns, and the fabrics produced. TTD: 10-48

Fiber applications I 5

Asbestos. Method of producing a catalyst of fibrous asbestos. Louis L. Shreier (to Baker & Co.). USP 2 444 896, July 6, 1948.

A method of forming platinized asbestos into coherent pad by settling of the asbestos fibers from a water suspension and drying is claimed.

VBS TTD: 10-48

Felt. Felt hardening machine. Arthur J. Evers. USP 2 442,590, June 1, 1948.

Modification of a felt hardening machine by replacement of the canvas rubbing surfaces by porous abrasive stones results in a marked improvement of the felted surface.

RJB TTD: 10-48

Felt packings. Hycar-felt packings and gaskets. Anon. *India Rubber World 118*, 240 (May, 1948).

Felt in combination with Hycar latex and sheet rubber is being used to produce mechanical sealing, packing, and gasketing materials. Strips and washers of the material are known by the trade names of Vistex and Oil Foil. Through control of the ratio of felt fiber to the latex, the capillarity of the felt fibers is retained, thus obtaining

self-lubricating properties. Oil Foil, a laminate combining the felt seal and one or more septums of 1/64- or 1/32-inch Hycar sheet, can retain oil up to 400% of its weight and bleed the retained oil to point of friction if required. Oil Foil is applicable to a wide variety of uses, including machine spindles and bearings, wheel and motor bearings seals, etc. TTD: 10-48

Ramie. Anon. *Chem. Eng. News 26,* 2650 (Sept. 1948).

Ramie, one of the worlds' oldest vegetable fibers and one that has tantalized textile engineers for more than a century in their efforts to find a practical end use for the material, is now being produced as packing for reciprocating pumps by U. S. Rubber Co. Ramie packing is recommended for such uses as cold water and brine pumps because its high tensile strength and ability to absorb and retain lubricants minimize abrasion and prolong wear. Its toughness makes it suitable for packing applications where service requirements are too severe for flax or jute fibers. TTD: 10-48

Fiber processing I 6

Raw wool scouring. Wool scouring and carbonizing. Anon. *Am. Wool Cotton Reptr. 61,* 7-8 (July 3, 1947).

A wool scouring machine which uses trichloroethylene as a solvent for removing wool grease, paint, and tar in a single continuous operation, is discussed. TTD: 10-48

INORGANIC FIBERS II

Fiberglas. Fibre glass and its uses for heavy textiles; rotproof and moisture properties. Anon. *Jute & Canvas Rev 19,* 17-18 (May, 1948).

A brief survey of the uses of Fiberglas is given. TTD: 10-48

Glass fibers. Anon. *Chem. Eng. News, 26,* 2650 (Sept. 1948).

Glass fibers and plastic resins are being combined by General Textile Mills, Inc., to make a high-strength, lightweight parachute pack for the Bureau of Ordnance of the Department of the Navy. The glass used in fabricating the parachute pack is a newly developed Fiberglas mat. The fine glass fibers reinforce the synthetic plastic material much as steel rods reinforce concrete. The resin used is of a polyester type made from styrene. The combination of glass fibers and resin provides a molded material that is not affected by moisture or distorted by extremes of heat and cold, and that

possesses impact strength greater than that of metals and other phenol-formaldehyde-resin-impregnated materials. TTD: 10-48

FIBER TO YARN III

Carpet yarns. Carpet yarns. S. Kershaw. *J. Textile Inst. 38,* P431-43 (Sept. 1947).

A brief discussion is given of the different types of wools used in the manufacture of carpet yarns. The spinning and processing of the yarn is also reviewed. TTD: 10-48

Flax yarn. Some developments in flax yarn production. S. A. G. Caldwell. *J. Textile Inst. 38,* P461-68 (Oct. 1947).

Improvements in plant layout, machinery, and working conditions in the linen industry are discussed. Suggestions are given for increasing production and quality. TTD: 10-48

Yarn numbering. Spain's new method of yarn counting. Anon. *Fibres 9,* 7 (Jan. 1948).

Spain has adopted a standardized system of numbering yarn counts. The system, known as TEX, is based on the weight per unit length. The unit length is 1,000 meters. A 1 TEX yarn will weigh 1 gram per 1,000 meters, a 2 TEX yarn will weight 2 grams per 1,000 meters, a 3 TEX yarn will weigh 3 grams per 1,000 meters, etc. TTD:10-48

Yarn numbering. Yarn counting reforms. Anon. *Fibres 9,* 61 (Feb. 1948).

The Textile Institute, in May, 1945, held a conference on yarn counting systems, and suggested for use in the United Kingdom the same system that has been adopted in Spain and named "Tex". In order to achieve brevity, the Textile Institute proposes that the abbreviation "gK" (from grams per kilometer) be used as a name for the system, which is based on a unit of length of 1 kilometer. No attempt at unification by decree, as in Spain, is contemplated. TTD: 10-48

Yarn numbering. Proposal for a reduced range of yarn counts, II.—A basis for a range of standard counts. A. W. Bayes. *J. Textile Inst. 38,* P487-99 (Nov. 1947).

This paper is a continuation of an earlier paper (see *J. Textile Inst. 36,* P87-92 (July 1945) and TTD: *2,* 377) advancing proposals for a reduction in the range of cotton yarn counts. The present paper sets forth arguments in detail for such a reduction and discusses the various factors that must be considered. A practical scale of standard counts is given and its use discussed. TTD: 10-48

Fiber preparation III 1

Card. Carder connected with a tubular cap spinning frame. Schulze & Kühn. Gerbrüder Friese A. G. Ger. P. 716 419, Jan. 19, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5*, 648 (May 16, 1947).

Drawing included. TTD: 10-48

Card clothing. Types of card clothing. R. S. Audley. *Fibres 9*, 56-59 (Feb. 1948).

The characteristics and uses of various types of card clothing are given. Fillet clothing, sheet clothing, and metallic or Garnett wire are discussed. TTD: 10-48

Carding. Carders' Guild meeting. Anon. *Am. Wool Cotton Reptr. 61*, 9-10 (Nov. 20, 1947).

A discussion of the problems of modern carding and carding carpet yarns at the Carders' Guild meeting is summarized. TTD: 10-48

Carding wool. Is indiscriminate high production desirable in woollen carding? A. Varga, Carding Specialists Co., Ltd. *Textile Mfr. 73*, 504-05 (Nov. 1947).

This paper is a discussion of 'Some recent trends in woollen carding," by R. W. Wright and A. Brearley, which appeared in *J. Textile Inst. 38*, P319-39, (Aug. 1947) and *Textile Mfr. 73*, 300-02 (July, 1947) (See TTD: *5*, 7). TTD: 10-48

Comber detaching system. Detaching system. Frank L. Crockett (to Whitin Machine Works). USP 2 444 554, July 6, 1948.

This invention describes a comber detaching system, the object of which is to improve the piecing of the lap, and concerns the piecing rollers themselves and the means by which they are driven with an alternate forward and backward motion. A novel feature of the system is that hard, smooth surfaced, positively-driven, front rolls are employed in the roll assembly instead of the conventional leather-covered top roll and steel-fluted bottom roll.

JAW TTD: 10-48

Drawing. Cottons mills make better drawing sliver. Seth Carter. *Textile World 98*, 124, 294-98 (Sept. 1948).

Because of slow delivery of new equipment, several mills have experimented with old machines and produced sliver that paid off in improved spinning and weaving efficiency. The factors found to be useful in improving operations were replacement of top rolls, correct distribution of draft, proper roll setting, tension, and adequate cleaning. In some cases the drawing frame rolls were set to the maximum staple length, instead of the classified length, to prevent fiber damage.

LCL TTD: 10-48

Drying wool. Wool drying. Anon. *Fibres 9*, 190 (May, 1948).

A new automatic drying machine developed by Taylor, Wordsworth & Co., Ltd., can be used for drying all types of fibrous material. The machine's chief application is in the drying of loose wool when it comes from the scourers. Air is taken in at the delivery end of the machine and passed alternately up and down through the material being processed. The air is cool when first introduced to the wool and is heated by steam heater batteries during its progress to the feed end where it is expelled. TTD: 10-48

Fiber preparation. Picking, carding and drawing aids. Anon. *Am. Wool Cotton Reptr. 62*, 13-16, 18 (Apr. 8, 1948).

The questions on picking, carding, drawing, and roving which were presented at a meeting of the Textile Operating Executives of Georgia are discussed. TTD: 10-48

Gill box leathers. Life of gill box leathers. Anon. *Fibres 9*, 60-61 (Feb. 1948).

Factors affecting the life of gill box leathers are discussed and recommendations for improving efficiency and prolonging their life are given. TTD: 10-48

Gill-drawing frame. Unit for gill-drawing frames. Jos. Monahan. USP 2 431 412, Nov. 25, 1947.

The gear driving the helically grooved faller bar actuating means of a gill-drawing frame is made adjustable to the helically grooved member or its cam so that quick and facile positioning of these parts may be accomplished.

JHB TTD: 10-48

Handling picker laps. Mechanical lap handling system produces savings. W. B. McGuire. *Textile World 98*, 108-09 (Aug. 1948).

Columbia Mills, Columbia, S. C., handles picker laps weighing 70 lbs. from the first floor room to a second floor card room. The system operates as follows: The picker tender lifts the lap out of the picker by means of the carrier hook and pushes the carrier aside. The lap assembly then moves by gravity to a scale on which it is automatically weighed and off-standard laps rejected. The power conveyor carries it to the card floor, above, where it is moved by gravity to the desired card.

LCL TTD: 10-48

High drafting. English high drafting methods. Anon. *Am. Wool Cotton Reptr. 61,* 13 (Aug. 28, 1947).

A 2-zone high speed draft frame that is used in combination with either of 2 Casablancas systems for ring frames is briefly discussed. A wide range of yarns can be spun by this arrangement.
TTD: 10-48

Long draft. Development of long draft. Anon. *Am. Wool Cotton Reptr. 62,* 9-10, 14 (Jan. 22, 1948).

The development of drafting systems, from the invention of the first drafting rollers in 1738 to today's long drafts of 50, are reviewed.
TTD: 10-48

Pin drafter. New pin drafter speeds processing. Anon. *Am. Wool Cotton Reptr. 61,* 12, 42 (Dec. 25, 1947).

All operations between combing and roving may be accomplished on the Warner & Swasey pin drafting machine for producing high quality sliver. Wool, blends of wool with cotton or synthetic cut staple, and synthetic cut staple possessing crimp can be handled by this machine. TTD: 10-48

Revolving flat card. Tomorrow's card, what will it be? Anon. *Am. Wool Cotton Reptr. 61,* 9-10, 53-4 (Nov. 13, 1947).

In a review of the development of the revolving flat card, it is noted that no fundamental change in card construction has been made since 1885. Various attachments for increasing the efficiency of the card are discussed. TTD: 10-48

Synthetic fiber preparation. Improved synthetic fiber picking. Anon. *Am. Wool. Cotton Reptr 62,* 11-12, 20-1 (Apr. 29, 1948).

Opening, picking, and blending of synthetic fibers on cotton machinery are discussed. TTD: 10-48

Blends III 2

Fur blends. A new dimension in textiles; fur in fabric. Fred Schacter, Unique Fibers, Inc. *Textile Colorist 70,* 38, 48 (Feb. 1948).

The use of fur in fabrics is discussed. Characteristics of mink, muskrat, raccoon, wolf, and opossum fur and their special uses are given.
TTD: 10-48

Spinning III 3

Builder motion. A new speed frame building motion. Anon. *Textile Mfr. 73,* 555 (Dec. 1947).

A new builder motion developed by Tweedales & Smalley, Ltd., is described and illustrated. The new motion provides quick and easy adjustment when alterations in hank are required. Changing the ratchet wheel and resetting the ratchet wheel catches have been eliminated. Only one spur wheel now requires changing. TTD: 10-48

Doffing and donning apparatus. Doffing and donning apparatus. Conrad W. Geier (to Robt. E. L. Holt, Jr.). USP 2 446 416, Aug. 3, 1948.

This invention relates to means for supporting package holders on a wheeled carriage mounted on trackways on the side of a twisting frame, spinning frame, and the like, there being provision for 2 upper package holders and 2 lower package holders, the upper preferably being filled with complete packages of yarn ready to be installed in the machine while the lower are provided for receiving the empty bobbins, spools, and the like in a doffing and donning operation. TTD: 10-48

Doubling and twisting. Silk and rayon doubling and twisting. *Fibres 9,* 190-1 (May, 1948).

A new combined silk and rayon doubling and twisting machine has been introduced by Ernest Scragg & Sons, Ltd. Features of the new machine are its ability to produce large size packages at high speed, a creel to take a variety of different types of supply packages, a new stop motion for individual spindles, and a feed roller with a patented zig-zag V-groove which gives a uniform degree of twist and eliminates slip. Bobbins with a capacity of 1 lb. of yarn can be built on the machine. TTD: 10-48

End breakage. End breakage in cotton ring spinning; conference at Manchester, 6th November, 1947. *J. Textile Inst. 38,* P533-92 (Dec. 1947); *Textile Mfr. 73,* 562-66 (Dec. 1947). (Abstracts only).

The following papers were given and discussed at the conference: 1) The Spinning End Breakage Test and Some Typical Results, by A. F. W. Coulson; 2) End Breakages at the Ring Frame. Their Effect on P. M. H., by Jas. Baines; 3) An Analysis of Technical Factors Controlling Spinning Breaks at the Ring Frame, by F. Charnley; 4) Some Factors Affecting End Breakage in Ring Spinning, by J. U. Steiger; 5) The Analysis of the Results of End Breakage Tests, by A. Ormerod; 6) Motor Speed Control in Ring Spinning as an Aid to Reducing Yarn Breakages, by F. J. Stevenson; 7) End Breakages in Cotton Ring Spinning, by T. M. M. [Textile Machinery Makers]; and 8) End Breakages in Cotton Ring Spinning, by E. G. Hegedus. TTD: 10-48

Plied yarns. Method and apparatus for plying strands. Seddon C. Nelson (to Am. Viscose Corp.). USP 2 442 775, June 8, 1948.

In twisting 2 or more strands together into the form of a plied or doubled construction, the necessity to have each yarn under the same tension is avoided by providing a common yarn-feed control means. The feed control arrangement described provides for rapid and easy lacing. TTD: 10-48

Pneumatic exhaust. Pneumatic exhaust applied to spinning. Jose de Caluwe. *Textielwezen 4,* 29-31 (June, 1948).

Some calculations are given on the cost of spinning with and without exhausting the air around the spindles. It is concluded that the economic advantages of the pneumatic exhaust is indisputable and that it should be used on new machines, especially those spinning the larger numbers of yarn. However, the installation requires regular care to maintain its efficient operation.

TTD: 10-48

Ring spinning. Ring spinning with movable spindle rail. M. Sattanathan, Kesoram Cotton Mills, Ltd. *Indian Textile J. 58,* 332-35, 370 (Jan. 1948).

The movable spindle rail developed by J. J. Rieter & Co. of Winterthur (Switzerland) is described and discussed. TTD: 10-48

Ring spinning. Cotton ring spinning. Peter M. Strang, Inst. of Textile Technology. *Am. Wool Cotton Reptr 61,* 7-9, 11, 41; 87-90 (Aug. 7, 14, 1947).

The quantity and quality of production are limited by various factors inherent in ring spinning frames. An analysis of these limiting factors is given which includes discussions of traveler speeds, spindle speeds, settings, type of rolls, roll covering, etc. TTD: 10-48

Ring spinning. Improved French-type spinning. Anon. *Am. Wool Cotton Reptr. 61,* 11, 34 (Dec. 25, 1947).

All worsted yarns from single 10s to single 90s can be spun on the new improved French type worsted ring spinning frame. The use of high draft, individual drives for each side of the frame, and self-centering roller bearing spindles are two of the many highlights of this frame. TTD: 10-48

Silica in spinning. Colloidal silica aids woolen and worsted spinning. Russell L. Brown. *Textile World 98,* 123, 206, 210 (Aug. 1948).

Finer, stronger, loftier, and more uniform yarns are being spun in some woolen and worsted mills

today through use of colloidal silica. One such material is Syton, developed and marketed by Monsanto Chemical Co. The addition of 2% to 3% of Syton to the weight of the stock at the woolen picker by means of an oil emulsion is generally used. In the worsted system, 0.5% to 2.0% of silica on the weight of the stock is adequate. Certain reported mill tests indicate an increase in skein strength of 20%, at the same time reducing the twist 20%. Certain 24s singles increased in skein strength 20%. A limit spin of 32s yarn was raised to 37s and was 7.5% stronger than the untreated yarns. Colloidal silica has no detrimental effect on weaving, dyeing, fulling, or other finishing treatments. It is not injurious to the fibers and has no abrasive action.

LCL TTD: 10-48

Spindle bracket. Marquette's spindle bracket. Anon. *Am. Wool Cotton Reptr. 62,* 12 (Mar. 18, 1948).

It is possible to throw rayon, nylon, and silk on any type of frame because of a new spindle bracket for roller bearing spindles.

Spindle lubrication. Lubrication of high-speed shafts or spindles. Camille C. S. Le Clair. USP 2 445 227, July 13, 1948.

This invention relates to a method of supplying lubrication under pressure and a means for collecting excess oil. A porous wiper or collector is pressed into close contact with the shaft and is connected to a suction source adapted to create a slight vacuum, thus preventing excess oil from being thrown about the adjacent area.

JAW TTD: 10-48

Spinning. The P. S. C. system. Anon. *Fibres 9,* 167 (May, 1948).

A new system of worsted yarn production has been developed by Prince-Smith & Stells, Ltd. The system is known as the "Prince-Smith Centrifugal," or "P.C.S.," and is applicable to drawing, spinning, and twisting. Only one type of spinning machine is required and it replaces cap, ring, flyer, and mule types. Details are not being released as the system is still in a developmental stage. Application of the P.C.S. system to cotton yarn production is being investigated by Textile Machinery Makers, Ltd., from information supplied them by the originators. TTD: 10-48

Spinning. Decreasing breakage during spinning by a pneumatic method. Filex. *Textielwezen 4,* 27-8 (Apr. 1948); *in French.*

The use of air suction to remove broken-off pieces

of fibers and to prevent tangling has the advantages that the atmosphere is freed of small fibers and down, yarns of better quality are produced, and breakage is reduced. The waste recovered in this way can be used without passing them through an intermediate machine. The use of suction requires more power, however, and may increase the amount of waste under some conditions. TTD: 10-48

Spinning control. Spinning control cuts labor and waste. P. M. Thomas. *Textile World 98*, 121, 188, 189 (Aug. 1948).

The Beaumont Manufacturing Company, Spartanburg, S. C., has installed an automatic doff control system made by the Numo Machine and Engineering Company, Charlotte, N. C., on its spinning frames. The resulting uniformly filled bobbins are claimed to reduce labor and bobbin-tail waste. In warp installations, the system will pay for itself in 2½ to 3 years. Essentially it is a pneumatic system actuated by the ring-rail guide rod. When the bobbin has been built up to a predetermined size, the frame is automatically stopped.
LCL TTD: 10-48

Spinning frame control. Spinning frame control. David R. Neely. USP 2 445 687, July 20, 1948.

This invention provides a control for spinning frames in which the frame is stopped and the ring rail lowered to starting position upon completion of the winding operation, thus relieving the operative of watching the operation and stopping the machine upon completion of the winding. The device is completely automatic and may be applied to all standard spinning frames with substantially no alterations. TTD: 10-48

Spinning rayon staple. Spinning long staple rayon. S. A. G. Caldwell. *Textile Mfr. 73*, 512-13 (Nov. 1947); 56-70 (Dec. 1947).

Flax tow type drawing frames, designed on the push bar and spiral screw principles, are, within certain limits, giving highly satisfactory results in the processing of long staple rayon. Features of the design and operation of these 2 types of drawing frames are discussed. A discussion of drawing and doubling, weight and quality control, card and frame drafts, and rove weight is given. TTD: 10-48

Spinning rayon staple. Rayon staple spinning. H. Ashton, Courtaulds, Ltd. *Am. Wool Cotton Reptr. 61*, 75, 77 (June 26, 1947).

A lecture describes the spinning of rayon staple with a discussion of the influence of staple length

and filament denier on the yarn strength and the range of yarn counts obtainable. TTD: 10-48

Spinning worsted. Moisture and worsted spinning; the regain factor. R. S. Audley. *Fibres 9*, 257-8 (July, 1948).

The hygroscopic characteristic of wool makes it highly important that the regain factor be considered in count testing off the spinning frame. If moisture content is ignored, the ultimate count delivered may not be accurate. It is recommended that count testing be done on an oven-dry basis, using 1/7th of a hank as a sample. A formula is given for computing the yarn count at standard regain. TTD: 10-48

Spinning worsted. Worsted on cotton system. Anon. *Am. Wool Cotton Reptr. 61*, 125 (Nov. 27, 1947).

Some of the methods and techniques for spinning domestic short wools on the cotton system are briefly described. TTD: 10-48

Spinning worsted. Worsted spun on new cotton-type equipment. Richard S. Crowsley. *Textile World 98*, 121, 256, 266 (Sept. 1948).

The Saco-Lowell Shops has installed its first unit for spinning worsted yarn from top on cotton type of equipment in the Wright Spinning Company, Westbrook, Maine. The unit follows a conventional organization, starting with combed worsted top. The top is first made into a lap on the lap winder, then run through the breaker drawing and again made into a lap on the lap winder. It is then processed on the finisher drawing. Sliver from this is drafted in one step of roving and spun on the spinning frame. The most serious drawback of this system is a severe limitation in the top that can be used. Fibers in this top cannot be over an average staple length of 3¼ in., with a small proportion of fibers not exceeding 3⅝ in. Details of the system and its operation are given.
LCL TTD: 10-48

Spinning worsted. Flyer spinning of worsted yarns. Anon. *Fibres 9*, 229-31 (June, 1948).

The limitations of flyer spinning of worsted yarns are described and discussed. TTD: 10-48

Tension control. Tension controlled filament feeding means. Ernest K. Bauer (to Am. Viscose Corp.). USP 2 442 336, June 1, 1948.

On a thread-advancing device for withdrawing an aggregate comprising a number of individual filamentary units from a number of sources of supply, an auxiliary tensioning means is actuated in response to a predetermined decrease in tension

in the aggregated of filamentary material being advanced, thus assuring continued feeding.
JHB TTD: 10-48

Twisting. Uptwister. Anon. *Fibres* 9, 115 (Mar. 1948).

An uptwister operating at 12,000 rpm and higher has been announced by R. A. Lloyd (Rochdale), Ltd. The machine, built in sections, has 40 spindles to a section, divided into 10 spindles on 2 decks on each side of the machine. A spindle bracket of new design eliminates splashing of oil on the yarn during processing. The oil tight bases of the spindles will last 4,000 to 5,000 working hours. TTD: 10-48

Variable speed motors. Individually regulated electric drives: a better means of obtaining the maximum profit from continuous twisters. Anon. *Textielwezen 4*, 36-9 (Apr. 1948).

The advantages of variable speed motors are discussed. TTD: 10-48

Winding III 4

Bobbin handler. Bobbin handling mechanism. Russell P. Drake (to Barber-Colman Co.). USP 2 445 998, July 27, 1948.

This invention provides an automatic bobbin handling mechanism which will so perform the functions of doffing and of storing a wound bobbin that the machine may be employed to wind delicate yarns, such as a fine cotton, nylon, or rayon. The invention also provides a doffing mechanism which will receive a wound bobbin from the winding machine and deliver the same to a storage device, such as slowly moving conveyor, without subjecting the material wound on the bobbin to any surface which will injure it. The doffing mechanism is associated with a donning device in such a manner that the 2 operations may be performed with but a single transfer mechanism. A clamping and shearing device synchronized with the doffing mechanism is also provided. TTD: 10-48

Bobbin holder. Bobbin holder. Anthony J. Strozinski (to Bendix Aviation Corp.). USP 2 445 542, July 20, 1948.

This invention relates to a novel bobbin holder which is shorter than types previously developed, allowing reduction of the space necessary between the upper and lower creelboards, and facilitating the mounting of the bobbins on the holder. A frictional grip on the bobbin is obtained by use

of an elastically deformable disc or ring situated in the bobbin holder.
JAW TTD: 10-48

Pirn winder. Pirn winder. Anon. *Fibres 9*, 279 (July, 1948).

The "Weft Master", a new single-spindle, high-speed pirn winder has been introduced by Muschamp Taylor, Ltd. The new winder has been designed for use with both cotton and rayon. Each spindle box is an independent unit and can be removed from the machine in a few seconds without interfering with the operation of the rest of the machine. Replacement boxes can be fitted in a short time also. Spindle speeds up to 8,000 rpm are possible, although maximum speeds are dependent on the wind used. TTD: 10-48

Reeling. Reeling. I-II. R. S. Audley. *Fibres 9*, 24-5 (Jan. 1948); 99-100, 101 (Mar. 1948).

The reeling operation is briefly discussed and suggestions are given for improving efficiency and production. TTD: 10-48

Thread-guide. Thread-guiding and tensioning means. John H. Bradnack & Harrison D. House (to Am. Viscose Corp.). USP 2 429 798, Oct. 28, 1947.

The unwinding of filamentary material from a plurality of supply packages is facilitated by a swingable guide common to a pair of said packages supported with their axes in a common plane, and having an associated guiding and tensioning means.
JHB TTD: 10-48

Warp beam compressor. Warp beam compressor device. Frank B. Javery (to Warp Compressing Machine C.). USP 2 444 775, July 6, 1948.

A warp beam compressor device is described that is an improvement on present methods as it saves floor space, and provides easier access for the operative to certain parts of the machine. An equal tension is exerted on the yarn at all times during the winding operation.
JAW TTD: 10-48

Winders. Czech winding machinery. A Special Correspondent. *Textile Mfr. 73*, 556-7 (Dec. 1947).

Details of a new Czech winding machine are given. The machine makes long traverse cheeses, which can be dyed or used as supply, as well as process packages for all the usual purposes of the weaving and knitting industries. Features of the new machine are illustrated by diagrams. TTD: 10-48

Winders. Yarn winding machine. Ferdinand F. Stange (to Foster Machine Co.). USP 2 438 722, Mar. 30, 1948.

A new type of winding machine for producing a new type of yarn package by a new method of winding is described.
JHB TTD: 10-48

Winding knitting yarns. Knit goods technology. Anon. *Am. Wool Cotton Reptr. 62*, 11-12, 33-4 (Feb. 19, 1948).

The importance of proper storage, winding, and sizing of yarn for quality knitting is discussed. Methods of winding, types of winding frames, and types of packages for knitting yarns are described. TTD: 10-48

Yarn processing III 5

Freeze-drying regenerated cellulose. Methods of freeze-drying regenerated cellulose. Frederick C. Wedler (to Am. Viscose Corp.). USP 2 444 124, June 29, 1948.

Moisture-laden cellulosic products are dehydrated in such a manner that moisture is frozen and subsequently sublimed off. The dehydrated cellulosic products retain substantially the shape and structural characteristics of the undehydrated products and do not readily change dimensionally or lose their porous structure when brought into contact with water.
CAC TTD: 10-48

Infrared drying. Means for drying extended lengths of thread with infrared lamps. Chas. R. Long (to Westinghouse Electric Corp.). USP 2 445 443, July 20, 1948.

Thread and cord comprised of natural and/or artificial fibers are dried by radiant heat energy emitted by infrared radiation lamps. This invention relates particularly to slasher drying. When used as a slasher drier, the unit is electrically controlled, and the quality of the dried thread is improved.
CAC TTD: 10-48

Yarn processing. New process for yarn treatment. Anon. *Am. Wool Cotton Reptr. 62*, 19 (Apr. 29, 1948).

Individual strands of yarn may be treated with finishing materials to impart unique properties. The yarns can be made abrasion resistant, water resistant, more efficient in weaving, and fuzz may be eliminated. TTD: 10-48

Yarn products III 6

Cordage manufacture. Modern thread and cordage manufacture. Finishing operations. Technologist. *Fibres 8*, 337-39 (Oct. 1947).

This, the twelfth and last article of a series dealing with all phases of cordage manufacture, discusses softening operations, size mixtures, machinery, polishing, surplusage removal, purification, special needs of jute, and use of sisal. (See *TTD 3*, 225, 270, 320, 487; *4*, 212; *5*, 9, 13.)
TTD: 10-48

Braiding machine. Braiding machine. Otto F. Goepfert (to Endless Belt Corp.). USP 2 444 436, July 6, 1948.

A braiding machine, particularly adapted for forming heddles of yarn, permits continuous, high-speed, automatic operation by arranging the guideways in the braiding tables in relation to the number of yarn carriers used.
JHB TTD: 10-48

Rope. Rope. Stephen A. Reed (to Plymouth Cordage Co.). USP 2 438 864, Mar. 30, 1948.

In large ropes hitherto known, having inner yarns shorter than the outer or cover yarns which surround them, the full strength of all of the yarns is never available. The shorter yarns become taut, and may break, before the full stretch, and strength, of the longer yarns in the same strand have been realized. This invention provides, for a strand which is so large that some yarns in it stand surrounded by other yarns, a construction in which, (1) all yarns can have equal length or, at choice, at least will be more nearly equal than in a conventional construction; and (2) has them organized so that the rope is of all-around utility.
TTD: 10-48

YARN TO FABRIC IV

Yarn preparation IV 1

Nylon yarn processing. Nylon processing before weaving. F. Millard. *Am. Wool Cotton Reptr. 62*, 15-17 (July 15, 1948).

The processing of nylon yarn from the nylon package, as delivered by the spinner, to the segregation of warp and weft yarns is described with details of twisting, twist-setting, doubling, winding, warping, and warp sizing. TTD: 10-48

Size auxiliary. Polsheen. Anon. *Fibres 9*, 281 (July, 1948).

Polsheen added to starch sizes strengthens the size and prevents it from cracking out when cold.

The products, manufactured by Amoa Chemical Co., Ltd., lays the hairs better and gives strength to the yarns. Polsheen can be used instead of waxes and tallows, alum and other preservatives. In twine polishing, 10 lb. of Polsheen is added to 100 gals. of size at the bore; a total absence of hairiness may be secured. TTD:10-48

Slasher. Electrically controlled sleasher. E. J. Eaddy, Textile Shops. *Am. Wool Cotton Reptr. 62,* 11-12 (July 29, 1948).

A description of the all electric-driven, Moist-O-Graph controlled slasher, its method of operation, and its advantages. The Moist-O-Graph indicates and records yarn moisture content by measuring the current as it comes from the detector roll at the delivery end of the slasher. TTD: 10-48

Slasher hood. Slasher hood. Woolmer W. Myers (to Wolverine Equipment Co.). USP 2 443 924, June 22, 1948.

A slasher hood is described which prevents water of condensation from dripping on the yarns being dried. Baffles are arranged in an enveloping hood to permit free passage of water vapor from the yarn, but also effectively to prevent any condensate from dripping on the yarn.
CAC TTD: 10-48

Slashing. Slasher-room improvements up production and quality. E. Dalton White. *Textile World 98,* 131, 294 (Sept. 1948).

The Anniston Manufacturing Co., Anniston, Ala., has improved its slasher room operation and increased production and quality. This was accomplished mainly through the use of automatic controls throughout and rearrangement of the equipment to provide more working space and straight-line flow of stock. Details of the installation and operation are given.
LCL TTD: 10-48

Slashing. Slashing practices studied by Alabama men. Anon. *Textile World 98,* 137, 198-206 (Aug. 1948).

Discussions of the Alabama Textile Operating Executives included variable-speed drives and controls on slashers, the Uxbridge Gentle-Air system of drying, size viscosity measurements and control, and the use of "softeners" separate from the size mix itself. The Uxbridge dryer was described in considerable detail by a representative of the company. Increased interest in viscosity measurements and control were shown. The use of "softeners" after applying the starch yielded contradictory results.
LCL TTD: 10-48

Slashing and weaving. Slashing and weaving questions. Anon. *Am. Wool Cotton Reptr 62,* 13-14, 29, 31, 33, 35 (July 15, 1948).

Slashing and weaving problems are discussed in a series of questions and answers by the Alabama Textile Operating Executives at the spring meeting. TTD: 10-48

Yarn conditioning. Worsted yarn conditioning practice. R. S. Audley. *Fibres 9,* 213-17 (June, 1948).

The principles, techniques, and machines used in worsted yarn conditioning are discussed.
TTD: 10-48

Weaving IV 2

Warp tying. Tying-in the warp. W. Middlebrook, Brocklehurst Whiston Amalgamated, Ltd. *Textile Mfr. 73,* 500-01 (Nov. 1947).

A brief discussion of the methods and techniques used in tying-in a warp are given. TTD. 10-48

Weaving nylon. The properties of nylon and its processing preparatory to weaving. F. Millard. *J. Textile Inst. 39,* P27-34 (Jan. 1948); *Textile Mfr. 73,* 521 (Nov. 1947).

The preparation of nylon yarns for weaving is discussed; only yarns of 30, 45, and 70 denier are considered. Throwing, twist setting, folding of thrown yarn, warp and weft preparation and weaving techniques are included in the discussion. A summary of the physical properties of nylon yarns is given. TTD: 10-48

Looms IV 2 a

Checking looms. Loom checking is aid to good weaving. Anon. *Textile World 98,* 116, 117, 196 (Aug. 1948).

At a recent meeting of the Alabama Textile Operating Executives, among the subjects discussed was the maintenance of looms and bobbins. Extensive checking of looms, particularly when shuttles are changed, has been found to be beneficial in improving weaving. Proper maintenance will also increase shuttle life. The large beam heads now being tried by some mills will increase production, but at the same time will create problems in handling and in style turnover.
LCL TTD: 10-48

Circular loom. New circular-type French loom. Anon. *Am. Wool Cotton Reptr. 62,* 15 (Aug. 5, 1948).

A new circular-type French loom which can weave

all regular counts of cotton, wool, rayon, and linen 3 to 5 times as fast as present models is briefly described. The loom operates with 8 shuttles which circulate simultaneously. TTD: 10-48

Filling feeler mechanism. Filling feeler mechanism. John Rinne & Robt G. Mallard (to The M. W. Kellogg Co.). USP 2 445 695, July 20, 1948.

This invention is an improvement over the present type of feeler motion. It is certain, positive, sensitive and quick in operation and has a minimum of abrasive or other injurious effect on the yarn of the bobbin being detected.

JAW TTD:10-48

Filling holder. Filling holder influences loom stoppage. Eugene P. Schremp. *Textile World 98*, 129 (Aug. 1948).

The stopping of a loom on the first pick of a filling change can be prevented by the use of an automatic filling end holder, which is described in detail. The vibrations of the running loom are used to turn 2 gear rotors. The gears, in turning, take up the slack in the filling end as the bobbin drops at each transfer. The vibration of the loom is transmitted to the gears by means of a swinging pendulum.

LCL TTD: 10-48

Improved warp beam. Warp beam for looms. Carl P. Bergstrom (to Crompton & Knowles Loom Works). USP 2 445 932, July 27, 1948.

This invention provides a warp beam formed with a metallic tubular barrel having fittings connected to plates or the like at the barrel ends and having gudgeons which are held in position on the fitting by a driving fit. The fitting at each end of the barrel is provided with a hub into which a gudgeon is driven in such manner that the inner end of the gudgeon projects beyond the fitting and into a bore in the aforesaid plate. The fitting is held by bolts or the like to the plate and can be removed together with the gudgeon when the latter is damaged. The gudgeon can then be removed from the fitting and replaced by a new gudgeon. In a modified form of the invention, the fitting has a hub which fits a bearing or bore in the plate.

TTD: 10-48

Jack strap and stirrup. Jack strap and stirrup. Fred A. Hamilton (½ to Jerry P. Lesley). USP 2 445 065, July 13, 1948.

A new type of jack strap and stirrup are described. Approximately 4″ of leather are saved on each jack strap, and wear is considerably reduced by fastening the strap through a suitable slot in the jack stick.

JAW TTD: 10-48

Jacquard loom. Jacquard. Anon. *Fibres 9*, 280 (July, 1948).

A new, re-designed center-shed jacquard has been introduced by Samuel Dracup & Sons, Ltd. An important feature of the new model, which is on the Verdol principle, is that it allows savings of as much as 20% in the cost of cards. The jacquard is compact and allows more light through to the weaver's working level. Details of operation are given. TTD: 10-48

Reeds. Fitting and setting the reed. W. Middlebrook, Brocklehrust Whiston Amalgamated, Ltd. *Textile Mfr. 73*, 551-52 (Dec. 1947).

The difficulties arising from improperly fitted reeds are discussed with reference to both loose-reed and fast-reed looms. TTD: 10-48

Sample loom. The Schildknecht system. Machine for weaving samples. Anon. *Textielwezen 4*, 11 (Mar. 1948).

This process makes possible the weaving of samples at small expense in a short time and with a small amount of material. The width can be varied from 5 to 50 cm. The edges of the samples are sharp and neat, regardless of the width.

TTD: 10-48

Shuttle binder. The "Simplex" swell [shuttle binder]. Anon. *Textile Mfr. 73*, 503 (Nov. 1947).

Details of design and operation of the "Simplex" shuttle binder, manufactured by Henry Livesey, Ltd., Greenbank Ironworks, Blackburn, are given. Experiments conducted with the new shuttle binder have revealed that in most cases the life of the pickers has been more than doubled, and savings have been realized in check straps and picking straps. TTD: 10-48

Shuttles. Gluing of wood shuttles. Anon. *Fibres 9*, 116 (Mar. 1948).

A device, known as the "Wood Welder", for gluing of wood shuttles by using a method of dielectric heating, has been announced by Pye, Ltd. Special adhesives are applied to the break and enough heat is generated by the device in 6 seconds to effect complete curing. The "Wood Welder" weights only 1½ lbs., and utilizes a generator supplying 100 watts of radio frequency at 190 megacycles per second. An automatic timer is another feature of the welder. TTD: 10-48

Shuttles of plastic. Loom shuttle. Otis C. Williams. USP 2 445 899, July 27, 1948.

A shuttle is described which, when molded of a suitable plastic, is relatively inexpensive since the molding operation is performed in a single step.

The completed shuttle shows greater impact strength, flexural and tensile strength than wood, and has water, acid, caustic and heat resistance, and is not subject to atmospheric changes. The points and other accessories will not work loose as with a wood shuttle. The shuttle will not split, crack or splinter as will a wood shuttle, and can be made in any and all sizes and is sturdy, practical, economical, and efficient for the work intended. TTD: 10-48

Thin place detector. Thin place detector for looms. John H. Chapman. USP 2 429 804, Oct. 28, 1947.

In this invention, means are provided whereby a detector finger is pressed against the lower side of the cloth, and this dectetor finger slopes upwardly and forwardly in the direction of travel of the cloth, so that if it should fall into a thin place in the cloth and the circuit should not be completed or the stop-motion mechanism should not be operated, and the loom should continue to run, the cloth will ride past the finger and no damage will be done to the cloth as a result of failure to stop the loom upon the detection taking place.
TTD: 10-48

Thread control. Thread control for weft replenishing looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 445 129, July 13, 1948.

The object of this invention is to insure a more certain transfer, with less yarn breakage. In the mechanism now in general use, the filling yarn is held at the magazine end of the loom. In this invention, the thread holder is located between the center of the loom and the magazine. In this way, the thread of the incoming bobbin does not pass under the magazine and there is no danger of its interfering with subsequent transfers.
JAW TTD: 10-48

Training film. C & K produces first of training-film series. Wm. A. Newell. *Textile World 98*, 112, 113, Aug. 1948.

The Crompton & Knowles Loom Works, Worcester, Mass. has just completed a 16 mm. black and white sound film entitled "Stroboscope Analysis of Its Modern Automatic High-Speed Bobbin-Changing Dobby Loom". The film runs 31 minutes and should be useful to mills in training loom-fixers and other weave-room workers.
LCL TTD: 10-48

Weft cutter. Weft cutter on multishuttle box looms. Chas. Fiorina (65% to Infald Novelty Co.). USP 2 445 024, July 13, 1948.

The object of this invention is to enable the weaver to weave several narrow fabrics on a loom from the same warp, cutting the filling between each fabric mechanically as the cloth is woven. It is very desirable in making handkerchiefs, toweling, and the like.
JAW TTD: 10-48

Fabric construction IV 2 c

Acetate spun bengaline. Rayon filament yarn extenders. Anon. *Am. Wool Cotton Reptr. 61*, 7-8, 35-6 (July 31, 1947).

Acetate-spun bengaline illustrates the ease of developing fabrics which may be readily manufactured and used to overcome the scarcity of rayon filament. An analysis of acetate-spun bengaline is given. TTD: 10-48

Blended flannel. Viscose and wool blend flannel. Anon. *Am. Wool Cotton Reptr. 61*, 17-18, 61, 63 (Jan. 15, 1948).

An analysis of a blended flannel fabric that combines regenerated cellulose yarns with wool yarns. The resulting cloth is an attractive, soft, flexible material which can be produced at a low cost.
TTD: 10-48

Chenille. Preparation of chenille. Garfield J. Underwood & Francis E. Farrell (to Mohawk Carpet Mills, Inc.). USP 2 429 434, Oct. 21, 1947.

A method for manufacturing chenille fabrics with a carved appearance is described. A chenille weft blanket is woven, cut into strips, mounted on a drum and the tufts cut in certain areas to conform with the pattern of the fabric. After being so treated the strips are inserted later by the weaver in the sequence required by the pattern.
TTD: 10-48

Gabardine. Filament gabardine fabric. Anon. *Am. Wool Cotton Reptr. 61*, 13-14, 24 (Aug. 21, 1947).

An interesting woven twill effect may be obtained by using 75-denier viscose rayon for the warp and 100-denier viscose rayon for the filling. The resulting filament gabardine fabric is analyzed.
TTD: 10-48

Muslin. Imported spun filament muslin. Anon. *Am. Wool Cotton Reptr. 62*, 9-10, 12 (Mar. 4, 1948).

An imported muslin fabric, composed of spun viscose warp and regenerated 2-ply filament filling, is coated to accentuate the fabric construction.

The fabric is fairly flexible, but is exceedingly rough. While unusual, the finished effect is not as permanent as is desirable. TTD: 10-48

Rayon crash fabric. Thick-thin crash fabric of filament rayon yarn. Anon. *Am. Wool Cotton Reptr. 61,* 15-16, 32 (June 5, 1947).

Thick-and-thin yarns, consisting of rayon filament yarns having different filament sizes at various points in the yarn, are being used to obtain a variety of effects in crash fabrics. A fabric analysis and data for weaving are given of a rayon crash fabric to illustrate one of the many effects that may be obtained. TTD: 10-48

Rayon crepe. Rayon crepe fabric construction. Anon. *Am. Wool Cotton Reptr. 61,* 13-14, 54-5 (Nov. 13, 1947).

A rayon crepe fabric in which the effect is obtained by the use of hard twisted yarns and shrinkage in finishing is analyzed. Details of its construction are given. TTD: 10-48

Rayon crepe. Special rayon crepe effects. Anon. *Am. Wool Cotton Reptr. 61,* 17-19 (Oct. 2, 1947).

Variations in rayon crepe fabrics may be obtained by the use of S and Z twists, and by the use of different yarn combinations. Details of the construction of a crepe fabric are given. TTD: 10-48

Rayon fabrics. Rayon combination yarn fabrics. Anon. *Am. Wool Cotton Reptr. 61,* 53, 55, 57-8 (Sept. 11, 1947).

Rayon yarn fabrics are made from filament yarns of various deniers in combination, from filament and spun rayon yarns in combination, and with the spun yarns entirely. One of these fabrics, consisting of actate filament heavy denier yarn combined with a regenerated-type yarn containing extra twist, is analyzed. TTD: 10-48

Rayon gabardine. Rayon gabardine. Anon. *Am. Wool Cotton Reptr 62,* 9-10, 12 (Mar. 18, 1948).

A crepe gabardine fabric of acetate and viscose rayon is analyzed. The use of a hard-twisted viscose filling produces more flexibility than is usual in this type of cloth. TTD: 10-48

Rayon-wool blend. Rayon and wool ply blend. Anon. *Am. Wool Cotton Reptr. 61,* 83-5 (June 26, 1947).

An analysis is given of a rayon and wool ply blend fabric which has a large amount of flexibility, more than the normal amount of softness, and a slightly variegated effect. The fabric effects

are attained by the use of S and Z twists which give one soft and one tight end when plied. TTD: 10-48

Spun rayon suiting. Spun suiting of cut fibers. Anon. *Am. Wool Cotton Reptr. 62,* 11-12 35 (Aug. 5, 1948).

An analysis is given of a spun viscose rayon fabric made from cut fiber. The fabric has a resiliency and crispness produced by a larger-diameter fiber and by high twist. Ply yarn is used for both warp and filling which gives added strength. TTD: 10-48

Towels. Toweling construction. Anon. *Am. Wool Cotton Reptr. 61,* 49-50 (Oct. 2, 1947).

Gray and finished samples of toweling are analyzed, and suggested constructions for more satisfactory toweling are given. TTD: 10-48

Tropical fabrics. Ply blend tropicals popular. Anon. *Am. Wool Cotton Reptr. 61,* 9-10, 42 (Dec. 4, 1947).

Various problems in the production of tropical fabrics are discussed, and the fabric construction of a ply blend tropical is described. TTD: 10-48

Upholstery fabrics. Auto upholstery changing. Anon. *Am. Wool Cotton Reptr. 61,* 13-14, 57 (July 17, 1947).

The use of flat woven type fabrics in place of pile fabrics for automobile upholstery is discussed. TTD: 10-48

Knitting IV 3

Streaks in nylon hose. Seamless-hose streaks can be eliminated. Chas. W. Arrowood. *Textile World 98,* 106-07 (Aug. 1948).

The new dark shades of fine denier nylon circular-knit hose reveal streaks which normally pass unnoticed in the lighter shades. These streaks are usually caused by improper maintenance, particularly in the needles, sinkers and cams. Stiff or improperly working latches, bent needles, out-of-line needles, dirty sinker slots, tight sinkers, burrs, nicks, etc., and general minor imperfections are usually found to be the causes of most streaks. LCL TTD: 10-48

Knitting machines IV 3 a

Heel fashioning mechanism. Heel fashioning mechanism for straight knitting machines. Eugene M. Zesch (to Rosedale Knitting Co. & Karl Lieberknecht, Inc.). USP 2 432 108, Dec. 9, 1947.

A mechanism, adaptable to existent flat hosiery machines, permits continuous knitting of complete flat stocking blanks having either square or oblong inset or gore heel cheeks.
JHB TTD: 10-48

Knitting hosiery. Waldensian makes another seamless first. C. Mallard Bowden. *Textile World 98,* 133, 300-02 (Sept. 1948).

The Waldensian Hosiery Mills, Valdese, N. C., are among the first mills to install Scott & Williams HH-PW machines. These mills are credited with the first in many items of manufactures. Details of the new installations are given.
LCL TTD: 10-48

Knitting machines. Knit goods technology. Anon. *Am. Wool Cotton Reptr. 62,* 27, 29, 31, 33 (Mar. 11, 1948); 11-12, 16 (Apr. 1, 1948).

A practical knitter explains methods of fitting needles in circular spring and rib body machines. The production of plaited and plush feed fabrics is discussed. The 3 main types of circular latch needle knitting machines are the revolving needle cylinder, the stationary needle cylinder, and the flat head rib machine. The principles, maintenance, types of stitches, and fabrics produced by each type of machine are discussed. TTD: 10-48

Knitting machines. Circular machinery developments. W. E. Shinn, N. C. State College School of Textiles. (A paper presented at the knitting forum, International Exposition of Textile Machinery, Equipment and Supplies, New York City, May 6) *Knitter 12,* 26, 29, 30, 32, 35 (June 1948).

Recent developments in knitting machinery are reviewed. A number of new machines are discussed and their special features described. New techniques and patterns made possible by the new machines are also discussed. TTD: 10-48

Knitting machines. New knitting loom developed by Professor C. M. Asbill. R. R. Friedman. *Textile Forum 5,* 9-11, 41 (Summer, 1948).

A description is given of a new knitting loom developed for use in home industry. The machine is designed to produce fringes, dish towels, table cloths, etc., and operates on the principle of laying the filling laterally across a line of needles knitting a warp in the form of a chain stitch. A unique feature of the new knitting loom is the pattern control. The filling pattern wheel can knit up to 24 courses before a repeat, and the warp pattern wheel can knit 12 courses before a repeat is necessary. A single adjustment is required to make one change in pattern. Fabrics up to 18 inches wide can be made on the machine. TTD: 10-48

Knitting machines. Circular-rib machines versatile for women's underwear. Chas. R. Carter. *Textile World 98,* 118, 119, 189, 190 (Aug. 1948).

During the last decade, shaped vest and panties sets have become well established in England's underwear industry. Attractive and varied designs can be knitted into these garments and the shape already knitted there is permanent. A wide range of practical designs is obtainable on circular machines. The Mellor-Bromley RLG series of machines is typical for this purpose. The RLG 7 circular rib machine is useful for most operations. However, a more desirable garment of this type can be made on the Mellor-Bromley RLGT-2 machine. Some details of both machines are given.
LCL TTD: 10-48

Knitting machines. Circular knitting machine. Edgar W. Clarke (to Interwoven Stocking Co.). USP 2 435 771, Feb. 10, 1948.

A circular knitting machine is described which permits the fashioning of a knitted article having both the advantageous characteristics of terry fabric and the desirable appearance and extensibility provided by Links-Links patterning.
JHB TTD: 10-48

Pattern mechanism. Multiple selection pattern mechanism. Chas. F. Miller (to Jacquard Knitting Machine Co., Inc.). USP 2 444 894, July 6, 1948.

A pattern mechanism for knitting machines is described which permits selection from among a number of operations by directing a controlled element to move to any desired one of a number of possible positions.
JAW TTD: 10-48

Pattern mechanism. Patterning mechanism of knitting machines. Geo. Wilders & John E. Lynam (to William Cotton, Ltd.). USP 2 431 218, Nov. 18, 1947.

On a straight bar knitting machine, a power means effects the relative bodily displacement between 2 alternative positions of a set of actuating members which are associated with a set of individually-movable patterning members. The selective movement of the associated patterning members is thereby permitted.
JHB TTD: 10-48

Take-up roll. Releasable roll take-up device for knitting machines. Alexander Dickno (to Blossom Products Corp.). USP 2 429 674, Oct. 28, 1947.

A take-up roll for stationary or revolving circular knitting machines mounted in a carrier having a releasable positive locking device to permit and facilitate the insertion and removal of the roll is described.
JHB TTD: 10-48

Tension control. Thread tensioning means. Geo. O. Young (to Vanity Fair Mills, Inc.). USP 2 442 796, June 8, 1948.

On a knitting machine, a resilient thread tensioning device provides a means for mounting the guide so as to permit tension adjustment.
JHB TTD: 10-48

Thread trap. Straight-bar knitting machine. Wm. A. Cooper & Ernest Start. USP 2 443 813, June 22, 1948.

Applied to a straight-bar knitting machine, this device automatically traps and severs the thread of any of the thread carriers when they are put out of action, and holds the thread until the carrier is brought into action again.
JHB TTD: 10-48

Web letoff mechanism. Web letoff mechanism. Brian Plunkett & Geo. Fama (to Celanese Corp. of Am.). USP 2 446 104, July 27, 1948.

This invention provides an improved let-off mechanism for warp knitting machines which will continuously let off the warp from the beam or beams without causing any sudden pulls or strains on the yarn or knitting elements, and without the use of tension rods. The warp let-off mechanism comprises a unit, consisting of 2 substantially similar motions, which is readily attachable to the framework of a warp knitting machine. The let-off mechanism is driven from the cam-shaft of the warp knitting machine and, through friction gearing and reducing gearing, is in driving connection with the beams of the warp knitting machine. Thus, the let-off and knitting rates are correlated. The friction gearing comprises a driver element adapted to be constantly rotated by a friction member, or members, driven from the cam-shaft. Suitable gearing connects the warp beam shaft and friction gearing, which not only drives the warp beam shaft but also effects a change in the radial distance in which the driving member, or members, contacts with the

driver member. In this way, the rpm of the warp beam is controlled to maintain constant the lineal feed of yarn to the knitting elements as the diameter of the yarn wound on the warp beam decreases. TTD: 10-48

Control devices IV 3 b

Elimination of static. Ionotron ends static problem in boarding. Anon. *Knitter 12*, 52 (June, 1948).

The successful application of a new static eliminator at Pohatcong Mills, Washington, N. J., is described. The device, called the Ionotron, consists of a continuous source of radiation attached to a machine near the point where static charges are generated. The air is ionized, thus becoming a good conductor of static electricity, and allows the static charges to flow to the eliminator, and from there to ground. In mill trials officials stated that all difficulties due to static were eliminated. The device is made by U. S. Radium Corp., New York City. TTD: 10-48

Fabric construction IV 3 c

Interlock fabric. Interlock fabric production. H. Wignall. *Textile Mfr. 73*, 510-11 (Nov. 1947).
The structure of interlock fabrics is discussed briefly, and features of the Mellor Bromley 3/RL and Blackburn interlock machines are described. TTD: 10-48

Knitting nylon socks. Knitting socks of spun nylon. W. B. Vincent, E. I. du Pont de Nemours & Co. *Am. Wool Cotton Reptr. 62*, 9-10 (Jan. 1, 1948).

The knitting of socks from spun nylon yarns and from combinations of nylon and wool yarns is discussed. TTD: 10-48

Locknit fabric. Production of locknit fabric. H. Wignall. *Textile Mfr. 73*, 567-68 (Dec. 1947).

Features of the F.N.F. knitting machine are described and a brief discussion of loop structure and fabric properties is given. TTD: 10-48

Textile thread. Device for working in a textile thread. Erwin Stenta & Fratema GmbH. Ger. P. 728 346, Nov. 25, 1942. 5 pp. *Bibl. Sci Ind. Reports 5*, 651 (May 16, 1947).
The thread is worked into the fabric by means of a latch needle mechanism. Drawing included. TTD: 10-48

Special fabrics IV 4

Lace. The lace furnishing industry; history, productions and prospects. L. Whitehouse. *J. Textile Inst. 38*, P607-14 (Dec. 1947).

The history of the lace furnishing industry, lace production and machinery, and the lace curtain type of jacquard loom are discussed. TTD: 10-48

Non-woven fabrics. Progress of non-woven fabrics. Anon. *Am. Wool Cotton Reptr. 62*, 67, 69, 71 (Apr. 15, 1948).

Masslinn nonwoven fabrics are webs of aligned fibers which are combined to form laps by a binding agent. They are composed of viscose rayon staple or a blend of viscose rayon staple and cotton. Masslinn fabrics are used as napkins, hand towels, clothing interlinings, pattern markers, and tea bags. TTD: 10-48

Type shearing machine. Type shearing machine. Anon. *Fibres 9*, 149 (Apr. 1948).

A new multiple shearer, designed to give one cut on the back and 2 to the face of the fabric, has been introduced by Sellers and Co. (Huddersfield), Ltd. Three shearing heads, driven by separate motors, are so situated that the process is in full view of the operative. A 4-speed gear box allows variations in speed of the shears to accommodate different types of cloths.

TTD: 10-48

Fabric processing IV 5

Calender batchers. Calender batchers. Anon. *Am. Wool Cotton Reptr. 61*, 13-14, 18 (Dec. 11, 1947).

The construction, installation, and operation of the various calender batchers are described.

TTD: 10-48

Calendering. Calender finishing techniques. Anon. *Am. Wool Cotton Reptr. 61*, 11-12, 55-6 (Nov. 13, 1947).

The operation and maintenance of calendering machines are discussed with relation to more efficient and economical operation. TTD: 10-48

Calendering. Friction calender operation. Anon. *Am. Wool Cotton Reptr. 62*, 9-10, 59 (Jan. 8, 1948).

Glazing of cotton fabrics is effected by causing the 2 lower rolls in a 3-roll calender machine to revolve with a surface speed which is slower than that of the surface speed of the chilled roll. A discussion of speed changes, driving and maintenance systems for multi-bowl calenders is given. TTD: 10-48

Chesting calender. Moire or water-mark finishes. Anon. *Am. Wool Cotton Reptr. 62*, 9-10, 49 (Feb. 26, 1948).

The operation of a 5 or 6 roll rack gear or chesting calender for making moire or water-mark finishes on cotton or linen fabrics is described. TTD: 10-48

Corduroy processing machine. New corduroy finishing machine. Anon. *Am. Wool Cotton Reptr. 62*, 13 (July 29, 1948).

A brief note on a new corduroy finishing machine which by slightly greater speeds, simplified design, and more efficient operation delivers about 80% more production. TTD: 10-48

Dryer control. Fielden electronic automatic control unity. Anon. *Fibres 9*, 26-27 (Jan. 1948).

An automatic control unit for use with the Fielden Electronic Hygrometer has been developed. The two instruments together will automatically control any type of drying machine. The device makes speed corrections by a small electric motor which operates the control mechanism of the machine. The equipment is easily adapted to existing drying machines. TTD: 10-48

Drying. The textile drying process. A. C. Walker, Bell Telephone Laboratories. *Am Dyestuff Reptr. 36*, 753-6 (Dec. 15, 1947).

The outstanding research of the last 20 years concerning the relationships of moisture in textiles has recently been summarized effectively for a variety of fibers to show that a few accurate measurements may furnish reliable data on the moisture content-relative humidity relationships of a textile material for a range of temperatures. While textile manufacturers are aware of the need of improved drying processes, they are more concerned with the problem of reducing costs by more rapid drying than with problems of basic moisture relationships which may determine conditions required in a drier in order to improve the quality and durability of the finished material. Knowledge of the structure of textile fibers and the manner in which they hold moisture is desirable in any attempt to improve the drying process. The practical application of vacuum drying to textiles, where high temperatures would cause damage, illustrates how the design of an apparatus to remove water from textiles was based on knowledge of the manner in which these materials hold moisture.

WPU,jr. TTD: 10-48

Drying. Textile drying. Myron T. Fleming, Proctor & Schwartz. *Am. Dyestuff Reptr. 37,* 333-9, 347-8 (May 17, 1948).

An address, with a number of diagrams and illustrations, covers theoretical considerations of drying; practical problems in material, production, and machine design requirement; and future trends in drying. Among the topics considered concerning future developments were the trend toward continuous production with resultant higher efficiency, the use of new quality control tests and new automatic instruments, and the need for closer cooperation between mill operating men and drying machinery manufacturers.

WPU,jr. TTD: 10-48

Drying. Textile drying methods compared. Myron T. Fleming, Proctor & Schwartz, Inc. *Am. Wool Cotton Reptr 62,* 11-12 (Feb. 5, 1948).

The factors of importance in drying textile fabrics are discussed. Hot air, infra-red, and high-frequency drying are compared. TTD: 10-48

Drying. Gas-fired dryers dry quickly, save space. C. Norris Rabold. *Textile World 98,* 122, 123 (Sept. 1948).

One type of gas-fired dryer is illustrated and discussed in its operating details. The heat is supplied by an oil gas generator and the drying medium is composed of the products of combustion and superheated water vapor. Temperatures of this mixture can be used up to 450°F and are claimed to drop 180°F during passage through the unit. Cloth passage in contact with the hot gases is less than 5 feet. Circulation of the gases is claimed to be 24 times a minute, using fans with a capacity of 6,000 CFM. Baffles in the gas stream are used to increase and decrease the velocity of the drying gases alternately in their passage through the narrow cloth slots, thus creating a pumping action against the cloth. Air velocity against the cloth is 4,000 feet per minute. The nature of the drying medium eliminates any oxidation which might take place at the temperatures used. Maintenance costs are very low, and are mostly in the gas generating unit. Lint particles are burned in the burners as they pass through.

LCL TTD: 10-48

Edge cutter attachment. Edge cutter attachment for sewing machines. Antonio Alifano & Nicholas M. Porreca. USP 2 443 369, June 15, 1948.

A readily attached and readily removable edge cutter attachment is affixed to an ordinary sewing machine to permit its use as an edge cutting machine.

JHB TTD: 10-48

Finishing knit goods. Precision finishing needed for striped knit goods. Irving Teplitz. *Textile World 98,* 139, 291, 292 (Sept. 1948).

In the finishing of circular knit fabrics, the use of the customary spreader roll puts a bow into the fabric. This can be prevented to some extent by a second run in a direction opposite to that of the initial run. However, this does not always give perfect finishing. A different operation draws the finished goods vertically over a long pipe, usually from one floor to an upper floor, with the cloth being fed from the lower floor and rolled on a paper tube on the upper one. This is not always convenient. There are several types of knit goods finishing calenders, each having its own particular advantages.

LCL TTD: 10-48

Hemmed material. Hemmed material and method of making the same. Chas. Seaman. USP 2 437 976, Mar. 16, 1948.

A new method of producing hemmed material secures the hem to the base material by spaced cross-stitches only.

JHB TTD: 10-48

Improved stretching device. Combined clip and pin chain link for fabric stretching machines. Philibert Deck. USP 2 446 131, July 27, 1948.

This invention relates to a combined clip and pin link for a stretching machine for textile material. In accordance with the invention, a pin strip is secured on the clip link somewhat below its working plane and on a carrying arm of the clip link, and there is also arranged a rotatable guard arm which, when the fabric is stretched by means of the clip, covers the pin strip. When, however, the fabric is stretched by means of the pins, the guard arm is rotated upwards and comes out of the way of the textile material and moves the movable clip arm into an inoperative position in which it remains out of contact with the clip plate. According to this invention, the parts of the clips, when idle, are protected against wear and do not damage the fabric, and the pins of the pin strips, when not in use, are guarded to prevent injury to the fingers of the operator. TTD: 10-48

Infrared drying. Infrared dries rugs faster. W. W. Clouse. *Elec. World 129,* 100 (July 17, 1948).

A 102 kw infrared unit dries rugs in 8 to 20 minutes where it formerly required 6 to 8 hours for drying in a 130°F room. According to the mill, the dried article has a soft fluffiness and bright appearance that was not obtained in other methods of drying.

CAC TTD: 10-48

Processing machinery. Starching and finishing methods. Anon. *Am. Wool Cotton Reptr. 62,* 9-10, 47-8 (Apr. 22, 1948).

In a discussion of fabric processing machinery, the settings and the operation of water and starch mangles, calenders, doubling machines and breaking machinery are reviewed. Processing in full width and in double fold is also discussed.

TTD: 10-48

Processing machinery. Finishing in dry state. Anon. *Am Wool Cotton Reptr. 62,* 11-12, 27, 29 (July 15, 1948).

A method of collecting napper cotton flock by means of an air-tight water box is discussed, and the design and operation of the hydraulic mangle for developing a moire or water-mark finish on cotton or linen are described. TTD: 10-48

Removing water marks. Removing finishing marks. Anon. *Am. Wool Cotton Reptr. 62,* 9-10, 14 (Mar. 25, 1948).

Water marks formed in finishing may be removed by a canroy machine. The operation of damping and batching machines is described. TTD:10 48

Sewing machine. Blind stitch sewing machine. Jos. Schifter & Henry L. Burkitt. USP 2 440 811, May 4, 1948.

A blind stitch sewing machine has a stitching zone capable of coping with the stitching of articles of varied dimensions, and a bight-forming means operated directly from the usual drive shaft, and housed completely out of such relationships as might be dangerous to an operator.

JHB TTD: 10-48

Sewing machine. Overedge sewing machine. Nicholaus Knaus (to The Singer Mfg. Co.). USP 2 441 099, May 4, 1948.

A transversely adjustable hem-folder for folding either flat or tubular work presents the folded workpieces to the trimming and stitch-forming mechanisms in such a manner that the projecting edge portion of each workpiece is trimmed off substantially in line with the fold.

JHB TTD: 10-48

Singeing. Singeing apparatus and method. Richard R. Cone (to Threads, Inc.). USP 2 444 553, July 6, 1948.

A singeing apparatus is described that has 2 spaced sets of singeing burners across which the warp is directed and a means of automatically stopping the machine when an end breaks or when the forward speed of the warp is not sufficient to prevent burning. The burners are automatically

extinguished when the warp is stopped. The singeing flame is adapted to penetrate between the yarn and singe all portions thereof.

RJB TTD: 10-48

Tensitrol process. New tensionless wet finishing. Anon. *Am. Wool Cotton Reptr. 62,* 15-16 (Apr. 22, 1948).

An illustrated description of the Tensitrol process is given. The most delicate fabrics may be precessed continuously at high speeds without subjecting the fabric to any tension. Fabrics remain tensionless regardless of any tendency of the material to shrink or stretch without requiring a change in speed of any moving part of the machine. TTD: 10-48

Fabric applications IV 6

Bias tubing. Bias tubing. Julius Katz & Frank P. Majoros (to Superba Mfg. Co., Inc.). USP 2 445 883, July 27, 1948.

Helically bias seamed tubing is being used to a limited extent in the bag industry, but the complicated method employed to produce the article has considerably hindered wider use in this field. This invention provides a cloth tubing in which the threads are diagonally placed with respect to each other and the bias cutting of unbiased cloth along helical lines is controlled so that the angle or degree of bias cut will predetermine the position of the threads. Bias seam tubing possesses a resiliency, as does all bias cut cloth materials, and according to the present invention, the degree of resiliency is predetermined by the angle or degree that the threads are disposed. In using bias tubing for bagging purposes, it is necessary to control the stretch of the bag and the present method accurately exercises such control. The present invention has the further advantage of producing tubular bagging material of any size, efficiently, quickly and inexpensively. This is accomplished by superposing strips upon each other or by dividing the bias strip longitudinally into as many sections as desirable, and then by seaming the divided sections together along their longitudinal sides so that a bag tubing is produced of the desired diameter. TTD: 10-48

Cotton facric backing. Linoleum type surface covering. Paul O. Powers (to Armstrong Cork Co.). USP 2 444 468, July 6, 1948.

The susceptibility of woven cotton fabrics to dimensional change upon absorption of water makes them greatly inferior to burlap as a backing for linoleum. This difficulty is claimed to be

overcome by the use of a carbamide-formalydehyde condensate. These may be as simple as urea-formaldehyde or as complex as some other carbamide resins, and the condensates may include water-soluble alcohols. A catalyst is preferably employed to accelerate the condensation reaction. The fabric may be treated with this resin mixture, dried, calendered, and then the linoleum mix applied. An alternate treatment is to treat the fabric with a lower concentration of the resin and, after impregnation and setting of the resin, to treat it with a sizing material similar to that used in stiffening burlap.

LCL TTD: 10-48

Fabric application. Process of vulcanizing. Walter H. Van Buren (to B. F. Goodrich Co.). USP 2 444 903, July 6, 1948.

Fabrics having warp threads of nylon and filling threads of cotton are used as wrappers to apply pressure to molded rubber objects during vulcanizing. The fabric is applied in such a manner that shrinkage of the nylon yarns will apply tension under the influence of the heat of vulcanizing.

VBS TTD: 10-48

Fabric impregnation. Plaster bandage forming machine. Jack R. Pava (½ to Douglas F. Pincock). USP 2 445 078, July 13, 1948.

A machine for the impregnation of fabrics with powdered materials such as plaster of Paris is described. Claims are made for a new and efficient means of guiding the fabric, a method for easy threading of the machine, and a method for maintaing the proper tension on the fabric.

VBS TTD: 10-48

Piping. Blind-stitched piping and method of producing same. Chas. Seaman. USP 2 437 977, Mar. 16, 1948.

This invention provides a method of producing blind-stitched piping which in appearance simulates hand work.

JHB TTD: 10-48

Piping. Sewing machine. Chas. Seaman. USP 2 437 978, Mar. 16, 1948.

This attachment can be used with any standard type single-needle machine for making a blind-stitched piping having a hand-made appearance.

JHB TTD: 10-48

Piping. Piping and method of producing same. Chas. Seaman. USP 2 437 979, Mar. 16, 1948.

A piping is secured at spaced intervals throughout its length by cross-stitches, thereby resisting

breakage caused by longitudinal stress.

JHB TTD: 10-48

Predoped fabric. Method of making predoped fabric. Benjamin R. Hanson (to The Sherwin-Williams Co.). USP 2 444 507, July 6, 1948.

A process for making a soft pliable predoped fabric suitable for use in covering airplane frames and like structures is described. The undoped fabric is soaked in a water-hydrocarbon (naphtha) emulsion; excess liquid is squeezed out by passing the cloth between rolls. The dope, consisting of nitrocellulose, plasticizer, and suitable solvent mixture, is then applied; drying and caldering complete the process. The process utilizes a nitrocellulose solvent more volatile than the water-hydrocarbon emulsion in order to precipitate the cellulose derivative in a manner to produce a well anchored dope coating that fills the thread interstices without impregnating them or locking them together.

MJC TTD: 10-48

CHEMICAL RAW MATERIALS V

Carboxymethylcellulose. Coated granules of a dry water-soluble salt of carboxylmethylcellulose. Manfred Landers (to Lanco Products Corp.). USP 2 445 226, July 13, 1948.

Water-soluble carboxylmethylcellulose in the form of a dry, granular powder in contact with water swells to form sticky gelatinous outer layers which prevent further penetration of the water. This causes the particles to stick together and reduces the rate of solution. This patent states that the addition of mono- or diglycerides of the higher fatty acids, with or without an aromatic carboxylic acid, to the dry carboxymethyl cellulose will cause it to go into solution in water rapidly.

TTD: 10-48

Glycerine. Glycerine in textile processes. Anon. *Am. Wool Cotton Reptr. 62,* 11-12 (Jan. 29, 1948).

In textile processing, glycerine is used as a hygroscopic and plasticizing agent, as a solvent, and as a water-soluble lubricant. Many uses are found for this versatile chemical in dyeing, printing, finishing, the production of synthetic fibers, and other textile processes.

Glyoxal. New synthetic fibers with glyoxal. Anon. *Am. Wool Cotton Reptr. 61,* 17 (July 31, 1947).

Glyoxal may be used in stabilizing rayons, in the manufacture of dyes, as a reducing agent for stripping dyes, for increasing the wear resistance of

cottons, etc. There is a future possibility of producing synthetic fibers by the extrusion of polyvinyl alcohol or casein through a glyoxal bath.

TTD: 10-48

Textile chemicals. Anionic substantive softeners. Earl D. McLeod, Arnold, Hoffman & Co. *Am. Dyestuff Reptr 37*, P30-3 (Jan. 12, 1948).

Anionic substantive softeners are a group of textile auxiliaries developed as softening agents for all types of fibers. They are alkali metal salts of fatty amino or fatty carbamino compounds in which all nitrogens are trivalent (described in USP 2 344 259 and USP 2 344 260). These materials have several advantages over the usual cationic softeners. They have no effect on the light fastness of dyes, give good heat stability to white goods, have minimum chlorine retention and are equally wash fast. Possible applications are with crease-resistant finishes, anti-fume compounds, etc., as well as pure finishing agents by themselves.

WPU,jr. TTD: 10-48

Textile chemicals. The Effect of Urea on Collulosic Textiles (South Central Section, AATCC). *Am. Dyestuff Reptr. 37*, P10-15 (Jan. 12, 1948).

Urea is used in the textile industry as a dyeing assistant, ingredient in sizes, and in softening and thickening agents. Cotton is treated with urea and phosphoric acid at elevated temperatures to make it flame resistant. The contraction of cotton yarns in caustic is enhanced by urea. The addition of urea to solutions of cellulose in sodium zincate, viscose, and zinc chloride causes a decrease in viscosity. Similar results were observed with aqueous solutions of carboxymethyl cellulose, hydroxyethyl cellulose, and methyl cellulose, although urea exerted little effect on the viscosity of a solution of cellulose in cuprammonium hydroxide ,polyvinyl alcohol, or starch.

WPU,jr. TTD: 10-48

THE WATER SOLUBLE GUMS. C. L. Mantell. New York, Reinhold Publishing Corp., 1947. 269 pp.; price: $6.00.

Reviewed in *J. Textile Inst. 39*, P36 (Jan. 1948).

TTD: 10-48

Plastics and elastomers V 1

Adhesive. Pressure-sensitive adhesive sheet. Ellington M. Beavers (to The Resinous Products & Chemical Co.). USP 2 445 553, July 20, 1948.

This patent relates to the production of a pressure-sensitive adhesive sheet or tape mounted on a flexible backing. The flexible backing materials are first coated with films or layers of a mixture of unsaturated, non-crystalline, tacky, thermoplastic linear polyester capable of cross-linking and a periodic catalyst. The film is then cured in the presence of oxygen. The polyester is thus converted to an infusible and insoluble layer which adheres very tenaciously to the backing and, at the same time, has a tacky surface. By curing the layer in the presence of oxygen, the curing of the surface of the polyester is inhibited; and while the layer remains tacky, it is cured sufficiently to insure its having the necessary cohesive strength to prevent smearing. The remainder of the film is converted to the insoluble and infusible condition. Thus, there is obtained a tape which is tacky on the surface, as pressure-sensitive adhesives must be, but it is extremely durable, stable, and resistant to solvents because the remainder of the adhesive layer is in the "cured" condition.

TTD: 10-48

Ethyl cellulose plastic. Plasticized ethyl cellulose composition. Chessie E. Rehberg, Wm. C. Mast & Chas. H. Fisher (to U. S. of Am.). USP 2 445 084, July 13, 1948.

This patent deals with a plasticized ethyl cellulose acrylic acid mixture, in particular with aplasticizer that is a polyester made up of a dicarboxylic acid, esterified with an alkenyl lactate in which the alkenyl group is either allyl or methallyl. The product may be molded, extruded, or rolled.

GNR TTD: 10-48

Ethyl cellulose plastic. Stabilization of cellulose ethers. Peter Van Wyck (to Hercules Powder Co.). USP 2 445 374, July 20, 1948.

Ethyl cellulose plastic material may be stabilized against the degrading defects of heat without any reduction in viscosity by adding small amounts (between 0.001 and 1%) of an inorganic salt of copper.

GNR TTD: 10-48

Improving adhesion. Glass fiber reinforced plastics. Erven White, Robert Steinman, & Lawrence P. Biefeld (to Owens-Corning Fiberglas Corp.). USP 2 446 119, July 27, 1948.

Treatment is described to effect better adhesion between glass fibers and synthetic resins or plastics. The sizing material applied to glass fibers during fabrication can be a mixture of starch or dextrinized starch, a lubricant, a cationic-active substance, plasticizers, emulsifying agents, wetting agents and water. The glass fibers, yarns,

or cloth containing this size mixture are heated to approximately 200°C for about ½ to 3 hours, depending upon the degree of adhesion desired. The glass is then combined with the particular resin that is to be reinforced.

CCJ TTD: 10-48

Methocel. Versatile is the word for Methocel. Anon. *Dow Diamond 11,* 27-31 (May 1948).

The many uses of Methocel, a cellulose compound made from wood or cotton linters by treating with caustic soda and with methyl chloride to give methylcellulose, are reviewed. A unique characteristic of the substance is that it is fluid at room temperatures but forms a jelly-like mass at higher temperatures. In the textile field, Methocel is used as a paste thickener for paste dyes.

TTD: 10-48

Plastic composition. Plastic from cottonseed hulls. Anon. *Chemurgic Digest 7,* 13-15 (Aug. 1948).

The University of Tennessee Research Corporation has developed a thermosetting molding powder which includes as its filler cottonseed hulls. Durability of sheaves and idlers made from this material is claimed to be superior to that of many other plastics. An eventual demand of ten million pounds per month of residue hulls from the cotton industry is predicted.

LCL TTD: 10-48

Plastic composition. Plasticized composition containing a cellulose ether and a polyacrylic acid ester. Chessie E. Rehberg, Wm. C. Mast & Chas. H. Fisher (to U. S. of America). USP 2 445 085, July 13, 1948.

This patent describes a cellulose ether-acrylic acid resin plasticized with a special plasticizer, in this instance, an ester of a polyhydroxyalcohol and a saturated alpha-hydroxy carboxylic acid in which the acid has less than 4 C atoms per molecule. Among the esters which are particularly valuable for the purpose are the lactates of glycols and glycerol and polyesters in which alkyl or substituted alkyl esters of hydroxy acids are acylated with polybasic acids. The plastic material produced by this process may be rolled, extruded, molded, or otherwise worked into useful articles.

GNR TTD: 10-48

Plastic composition. Plastic composition composed of a cellulose compound and an indanol ester. Frank J. Soday (to The United Gas Improvement Co.). USP 2 445 642, July 20, 1948.

The preparation of esters of indanol and methyl substituted indanol using various acids is described. These indanol esters are claimed to be very efficient plasticizers for cellulose acetate and ethyl cellulose types of plastics.

GNR TTD: 10-48

Plastic fabric. Plastic fabrics find big market. Anon. *Am. Wool Cotton Reptr. 62,* 103-4, 115, 117 (Apr. 15, 1948).

Lumite fabrics are resistant to mildew, abrasion, and stains from grease or ink. They are flameproof, durable, non-corrosive, easy to clean, and entirely impervious to ultra-violet rays. Application of this new plastic material may be found in seat covers, wall covering, shoes, upholstery fabrics, and many other uses. TTD: 10-48

Plastics in textiles. Plastic materials that supplement or supplant textiles. C. W. Patton, Bakelite Corp. *Am. Dyestuff Reptr. 36,* 757-60 (Dec. 15, 1947).

Plastic products of a textile nature, such as woven monofils, films, coated paper, and bonded unwoven textiles which are used and processed in a manner comparable to conventional textiles, are described. These materials are related to or involve many present-day textile processing operations and will probably enter into certain fields now held almost exclusively by conventional fabrics. A condensed outline of plastics in the textile field is presented, and most of the paper describes specific items in this outline.

WPU,jr. TTD: 10-48

Positex. Positex. Anon. *India Rubber World 118,* 518-20 (July, 1948).

The characteristics and uses of "Positex", a positively charged rubber latex for treating textile fibers, are reviewed and discussed. The information was prepared by the editors of *India Rubber World* from "Positex" bulletins Nos. 1-6, published by British Rubber Development Board, London, England. (See TTD: *4,* 117, 226, 324, 413, 442, 456). TTD: 10-48

Silicon polymers. Silicones and their application to the textile industry. F. L. Dennett, Dow-Corning Corp. *Am. Dyestuff Reptr. 36,* 748-53 (Dec. 15, 1947).

Organosilicon oxide polymers, more generally known as silicones, have been developed in a variety of physical forms ranging from fluids to resins. Because of their inertness, heat stability, inherent water repellency, ability to lubricate thermoplastic materials, and their desirable electrical properties, these materials have found ready application in many industries. Of particular

interest to the textile industry are silicone-insulated motors for application in atmospheres of high temperature and high humidity. Silicones in grease form, developed for use in the bearings of silicone-insulated motors, are indicated for use wherever temperature-resistant greases are needed. Silicone fluid already has proven its value as a lubricant and water-repellent treatment for glass fibers. Other fluids, in emulsified form, have given considerable promise as a new permanent water-repellent treatment, applicable to all fabrics.
WPU,jr. TTD: 10-48

Surface-active compounds V 2

Detergency. Studies in soiling and detergency. J. R. Clark & V. B. Holland, Cannon Mills. *Am. Dyestuff Reptr. 36,* 734-7 (Dec. 15, 1947).

The principal objects of this investigation were the study of various soils for detergency work, the development of a better standard soil, and the relationship of this soil to certain aspects of detergency evaluation. The properties desired in a standard soil are enumerated, and the experimental procedures employed are described. A large number of soiling formulas are listed, together with the general results of their application to cotton cloth.
WPU,jr. TTD: 10-48

Detergency. Fundamental considerations of surface chemistry applied to the problem of detergency. E. K. Rideal. *Chemistry & Industry,* 403, 409 (June 26, 1948).

The nature of soil particles, the modes of attachment of soil to fibers, the factors which effect suspension of soil in the washing bath, and the surface chemistry phenomena involved in soil removal are reviewed.
WPU,jr. TTD: 10-48

Surface-active compounds. Soapless soaps: what they can and can't do. Anon. *Modern Industry 15,* 40-44 (May 15, 1948).

The many surface-active materials—synthetic detergents, wetting agents, penetrants, and emulsifiers available today are reviewed. The characteristics and properties of different types of surface-active agents are discussed and the importance of selecting the right agent for each application is stressed. TTD: 10-48

Synthetic detergents. Synthetic detergents. Lawrence H. Flett, Allied Chemical & Dye Corp. *Am. Wool Cotton Reptr. 61,* 41, 43, 45 (Aug. 14, 1947).

Synthetic detergents, used in textile processing, speed up the process, are more economical, and are efficient at lower temperatures than soap. They are particularly useful in the processing of wool. TTD:10-48

Synthetic detergents. The development of synthetic detergents and future trends. F. H. Braybrook. *Chemistry & Industry,* 404-07, 409-10 June 26, 1948).

The historical development of synthetic detergents, their manufacture in various countries during World War II, their present status, and future trends in their production are discussed. The increasing demand for synthetic detergents can apparently be met by increasing the production of synthetics based on non-fatty oil raw materials, particularly petroleum.
WPU,jr. TTD: 10-48

CHEMICAL PROCESSING VI

Curing fabrics. Curing resin treated fabrics. Anon. *Am. Wool Cotton Reptr. 61,* 61, 63 (Aug. 14, 1947).

The methods and equipment used in curing fabrics which have been treated with melamine or formaldehyde-urea resins are reviewed.

Desizing enzyme. Anon. *Chem. Eng. News 26,* 2650 (Sept. 1948).

Rohm & Haas Co. announces a liquid diastatic enzyme concentrate for textile desizing named Rhozyme LA. According to the manufacturer, this latest addition to their series of textile desizing agents combines the recognized economy of a liquid enzyme with unusual stability at high temperatures, affording thorough and uniform desizing in the fastest possible time. It is claimed that continuous desizing with maximum economy will be possible, eventually eliminating one of the last batch processes remaining in cotton and rayon finishing plants. TTD: 10-48

Fabric finishes. Evaluation of fabric finishes. F. L. Barrett, Bleachers' Assoc., Ltd. *Am Wool Cotton Reptr. 61,* 81-6, 97-8 (Aug. 14, 1947).

A review is given of developments in mechanical finishes since Mercer's discoveries. Various modern finishes are discussed with details of their application. TTD: 10-48

Finishing cellulosic fabrics. The finishing of cottons and rayons. David X. Klein, Aspinook Corp. *Am. Dyestuff Reptr. 37,* 344-7 (May 17, 1948).

The entire processing procedure for cotton and

rayon fabrics from grey goods to converted is covered briefly in this address. Singeing, desizing, kiering, bleaching, printing and dyeing, aging and soaping, calendering, tentering, drying, steam (decating), and the application of various finishes are among the items discussed.
WPU,jr. TTD: 10-48

Finishing cotton goods. Cotton goods bleaching methods and chemicals. Cotton goods finishing. Anon. *Am Wool Cotton Reptr. 61*, 11-12, 54-5; No. 28, 11-12, 53, 55 (June 12, July 10, 1947).

Methods in the processing of cotton goods, such as caustic soda boiling, lime and ash system of boiling, scouring, and singeing processes, are described. The lime and ash system of boiling is not as economical and requires a longer time than caustic soda boiling, but it produces a more permanent and brilliant white in the bleaching stage. The need of a proper water supply in processing is discussed. TTD: 10-48

Laundering. Textile problems in laundering. J. Verbeke, Belgian Textile Institute. *Textielwezen 4*, 57-61 (July, 1948). (In Flemish, with summaries in French and English).

The importance of experimental work in this field is emphasized. TTD: 10-48

Mercerization. Cotton mercerizing ranges. Anon. *Am. Wool Cotton Reptr. 61*, 17-18, 71, 73 (Aug. 14, 1947).

The development of the mercerization process is reviewed and a comparison is drawn between early cotton mercerizing methods and those of the present day. A discussion of the operation of new mercerization equipment is also given.

Mercerization. New mercerizing techniques. Anon. *Am. Wool Coton Reptr. 61*, 59, 61-4 (Sept. 11, 1947).

A luster may be induced on cotton fabrics by effecting the mercerization of the cloth under tension. Details of the methods used in this treatment and a test to indicate the presence of a mercerized condition in cotton goods are given.
TTD: 10-48

Mercerization. Avoiding mercerizing defects. Anon. *Am. Wool Cotton Reptr. 61*, 11-12, 57 (Oct. 9, 1947).

Methods of eliminating defects caused by foreign matter and impurities in mercerizing cotton cloths are reviewed, together with some details of dyeing and finishing mercerized fabrics.
TTD: 10-48

Mixing equipment. Application and design of mixing equipment. H. E. Serner. *Chem. Eng. 55*, 118-121 (Aug. 1948).

The selection and design of adequate mixing equipment is necessary in order to obtain an adequate solution to mixing problems encountered by chemical engineers. Different types of agitation are required by the different classes of mixing which involve solids, gases and fluid materials. Experience has determined the paddle designs applicable to each class of mixing and the maximum velocity permissable for the paddle tips. Location of the agitator shaft and paddles or propellors has also been determined by experience. Charts, equations and sample calculations are given for the use of design and production work. Reference is made to an article in *Chem. Eng.*, Jan. 1948, p. 127, by the author.
LCL TTD: 10-48

Wool finishing. New finishes for wool fabrics. D. H. Powers, Monsanto Chemical Co. *Am. Wool Cotton Reptr. 61*, 19 (Aug. 14, 1947).

Syton, Lucenol, and Resloom finishes and their effect on woolens are briefly discussed. TTD: 10-48

Wool finishing. Wool finishing technology bared at AATCC meeting. John N. Dalton. *Textile World 98*, 125, 266-82 (Sept. 1948).

At the Northern New England section of the American Association of Textile Chemists and Colorists meeting at Andover, Mass., a 4-man panel answered numerous questions submitted by the audience. These questions included the theory of wool dyeing, the handling of chlorinated tops, the dyeing of wool piece goods, and the finishing of wool-nylon blends. The questions and answers are given in detail.
LCL TTD: 10-48

COLOR VII

Dyeing. Dyeing and finishing processes—I. Hints on avoiding untoward results. C. R. Denbridge. *Fibres 8*, 329-31 (Oct. 1947); II. Pitfalls in day to day practice. 414-16 (Dec. 1947); III. *9*, 32-3 (Jan. 1948).

Disadvantages accompanying new dyeing, finishing, and other forms of processing are discussed. The author draws upon many years of experience to recommend means of avoiding or correcting a number of process problems. TTD: 10-48

Pigmented resins. Pigmented resin emulsions for printing and pad dyeing. Max Silverman,

Sherwin-Williams. *Am. Dyestuff Reptr. 37,* 44-6, 62-3 (Jan. 26 1948).

The requirements of a satisfactory pigment used in a colored emulsion for successful dyeing or printing are discussed. Typical resins and resin combinations are listed. Pigmented resin emulsions on the market are "water in lacquer" for printing and "lacquer in water" for pad dyeing. WPU,jr. TTD: 10-48

Bleaching VII 1

Bleaching. New continuous bleaching unit. Anon. *Am. Wool Cotton Reptr. 61,* 20-1 (Aug. 14, 1947).

A brief illustrated description is given of a new continuous bleaching unit at Pepperell Manufacturing Company. TTD: 10-48

Bleaching. New bleaching range handles Startex Mills' output. Earle Mauldin. *Textile World 98,* 135 (Sept. 1948).

The Startex Mills, Tucapau, S. C., has installed its first continuous bleaching range for cotton and cotton-linen toweling. It differs somewhat from the usual peroxide continuous system. The first section is composed of a gray washer, caustic saturator, and J-box, and the next section of 2 washers, a peroxide saturator and a second J-box. To these have been added another washer and a sodium hypochlorite saturator, a small J-box, and a final washer. Other details of operation and construction are given.
LCL TTD: 10-48

Steaming cloth. Cloth steamer. Geo. W. O'Keeffe (to Proctor & Schwartz, Inc.). USP 2 443 990, June 22, 1948.

Continuous cloth bleaching apparatus is modified by arranging the wash bowls in the bottom of the steaming chamber, which permits the temperature of the washing solution to be raised above the boiling point thereof to effect a better washing of the cloth. The steam thus generated rises into the steam atmosphere of the steaming chamber where it is advantageously employed. The cloth leaves the steamer through a water seal to prevent escape of steam.
RJB TTD: 10-48

Dyeing VII 2

Dye kettle. Versatile piece-dye kettle. Anon. *Am. Wool Cotton Reptr. 61,* 77-8 (Aug. 14, 1947).

Use of the Riggs and Lombard new totally enclosed stainless piece-dye kettle virtually elimi-

nates wrinkles, creases, and dye streaks. In addition, savings are noted in the dyes and steam used. A knurled drum type multi-grip reel in the kettle eliminates slip and the operating troubles caused by slippage. TTD: 10-48

Dye liquor recovery. Method of recovering spent dye liquors by treatment with activated carbon and product thereof. Luigi C. Galatioto (to Textron, Inc.). USP 2 445 323, July 20, 1948.

Certain commercial activated carbons will completely remove the residual dye from various spent dye baths to allow the reuse of the chemicals in preparing additional baths of the same or a different color. Acidification of the spent liquors is helpful in effecting complete removal of the dye. Data on the efficacy of various commercial carbons in removing specific dyes are given in 11 tables.
RJB TTD: 10-48

Dyeing. Determination of the solubility of dyes. C. L. Zimmerman & H. R. McCleary, Calco Chem. Div., Am. Cyanamid Co. *Am. Dyestuff Reptr. 37,* 47-51, 56 (Jan. 26, 1948).

The theoretical aspects of solubility are discussed and are related to solubility determinations of dyes. The addition of various chemical compounds may increase or decrease solubility of dyes. A method for determining the solubilities of commercial dyes is described.
WPU,jr. TTD: 10-48

Dyeing. Latest in dyeing developments. J. H. Hennessey, Gen. Dyestuff Corp. *Am. Wool Cotton Reptr. 62,* 11-13 (Jan. 22, 1948).

Modern dyeing methods are reviewed, and recent improvements in these methods are discussed. TTD: 10-48

Dyeing. Dyeing yesterday and today. Sidney David, United Aniline Co. *Am. Wool Cotton Reptr. 62,* 129-30 (Feb. 12, 1948).

A comparison is made of dye manufacturing and processing 60 years ago and today. TTD: 10-48

Dyeing. The heats of reaction and affinities of direct cotton dyes for cuprammonium rayon, viscose rayon, and cotton. W. J. Marshall & R. H. Peters. *J. Soc. Dyers Colourists 63,* 446-61 (Dec. 1947).

The affinity of dyeing (standard free energy change) was calculated thermodynamically for 14 direct dyes on cotton, mercerized cotton, cuprammonium, and viscose rayon, based on equilibrium adsorption isotherms determined in the presence of sodium chloride over the temperature range 50-°100°C. For 3 of the dyes, it was impossible to

obtain consistent affinity values as the temperatufe was increased. This was attributed to aggregation of these dyes in solution; with the others aggregation was not encountered or it disappeared at the higher temperatures. Heats of dyeing and entropy changes were also calculated from the data. The results support the conclusion that a molecular attraction exists between the dye molecule and the cellulose chain molecule, equivalent approximately to that of 2 hydrogen bonds. The energy change of a given dye for all of the fibers studied is essentially the same, but is highly dependent upon the molecular structure of the dye. Differences in dyeing behavior of various cellulosic fibers must then arise solely from physical structural differences, such as variable surface area, pore size, or crystalline—amorphous ratio.

MC TTD: 10-48

Dyeing. The diffusion of direct dyes in cellulose. H. Alan Standing, John O. Warwicker & Hector F. Willis. *J. Textile Inst. 38*, T335-49 (Oct. 1947).

A diffusion-adsorption equation was developed for the absorption of direct dyes by cellulose sheet, and its validity was tested by applying it to the experimental data of Neale and his collaborators. The question was found to be partially successful in correlating data obtained with high concentrations of inorganic electrolyte of the external solution, but to fail entirely at the lower electrolyte concentrations. The simplifyiing assumptions are considered, and the possible cause of its failure at low electrolyte concentrations is indicated.

TTD: 10-48

Dyeing. Hints to dyers and finishers. J. L. Wauters. *Knitter 12*, 43-4 (Apr. 1948).

The efficient operation of a dyehouse is discussed briefly, and suggestions are given for improved methods of operation. TTD: 10-48

Dyeing. Process of fluid treating webs of fabric. Sumner H. Williams. USP 2 445 504, July 20, 1948.

The present invention is designed to deal with bleaching, dyeing, washing or other operations on a continuous web of textile fabric. The fluid used is confined to a very small channel in such a manner that it follows the fabric or textile web through the machine. By thus carrying the treating liquid forward with the textile material, the stripping or bleeding action during dyeing is minimized. The machine is essentially a series of U-shaped troughs, separated by squeeze rolls at every third or fourth trough. A baffle with a

roller on its lower end is inserted in each U-shaped trough. The clearance between the sides or faces of the baffle and those of the U chamber are very slight. These baffles are raised and lowered to facilitate threading of the machine. The treating fluid is fed at the fabric entrance of the machine so that it will follow the fabric as it goes through the machine. Surrounding all of the U-shaped troughs is a suitable heating mechanism.

LCL TTD: 10-48

Dyeing. Steam process for fixing coloring material in textile goods. Jean Wehrli. USP 2 446 502, Aug. 3, 1948.

A method is described whereby deeper dye penetration is obtained during dyeing or printing of textile goods. Following the treatment with the coloring material, the goods are exposed to wet steam in a container by means of alternate low and high pressure. The steaming under pressure removes part of the air in the fibers and the application of vacuum removes the remaining air. The pressure treatment immediately following forces the coloring, or impregnating, material into the fibers. This apparently shortens the time for dyeing, effects a saving in heat energy and coloring materials, and produces a more intense impregnation of the fiber.

CCJ TTD: 10-48

Dyeing nylon. The effect of fiber physical differences upon the dyeing of nylon staple. B. F. Faris & R. J. Thomas, E. I. du Pont de Nemours & Co. *Am. Dyestuff Reptr. 37*, P21-9 (Jan. 12, 1948).

Comparisons are made of the receptivity of nylon staple and continuous filament nylon yarns for penetrating and nonpenetrating dyestuffs. Light fastness is unaffected by fiber physical variations, while wash fastness of nylon staple dyed with direct dyestuffs is superior to continuous filament nylon dyed with acetate colors.

WPU,jr. TTD: 10-48

Dyeing viscose rayon cakes. Progress in the application of vat dyes to viscose rayon cakes. John Boulton, Courtaulds, Ltd. *Am. Dyestuff Reptr. 37*, 438-39, 442 (June 28, 1948).

Vat dyes are more difficult to apply to rayon yarn than are direct dyes because they have a high exhaustion rate and a lower diffusion penetration rate. They are of great interest, however, because of their superior fastness. Techniques used to apply vat dyes successfully to rayon cakes (temperature, use of restraining agents, pigment pad-

ding, addition of solvents to the leuco bath) are discussed.
WPU,jr. TTD: 10-48

Dyeing viscose rayon cakes. Selection of dyes and dyeing procedures for viscose rayon cake dyeing. J. A. Woodruff, Am. Viscose Corp. *Am. Dyestuff Reptr. 37*, 435-38 (June 28, 1948).

The manufacture and processing of viscose rayon yarn in cake form is reviewed, and the reasons are given for the currently increasing amount of cake dyeing. Machinery for dyeing of rayon cakes is discussed briefly, and there is a longer discussion of tests for the selection of the best dyes for the process. Diffusion penetration, rates of exhaustion, and compatability of dye mixtures are the principal factors considered.
WPU,jr. TTD: 10-48

Dyeing viscose rayon cakes. Dyeing rayon in vat and direct. Jackson A. Woodruff, Am. Viscose Corp. *Am. Wool Cotton Reptr. 62*, 9-10, 19 Apr. 1, 1948).

Methods of dyeing viscose rayon in cake form with both direct and vat dyes are described. A wide range of dyes may be used in these methods, but rayon cake dyeing is more exacting and sensitive to poorly selected dye combinations than rayon skein dyeing. TTD: 10-48

Extracting system. New extractors economical. Anon. *Am. Wool Cotton Reptr. 61*, 102 (Aug. 14, 1947).

Advantages of a new continuous automatic extracting system for use in dyeing wool and other fibers are reviewed. TTD: 10-48

Fluorescent dyes. A study of fluorescent dyes. H. E. Millson & E. I. Stearns, Calco Division, Am. Cyanamid Co. *Am. Dyestuff Reptr. 37*, 423-32 June 28, 1948).

Following a review of the uses of fluorescent dyes and of the theory of fluorescence, the sources of exciting radiant energy, the absorption of the energy by the dye, the emitting of radiation of different wavelengths by the dye, factors affecting fluorescence, effects obtainable in "black light" and in daylight, and optical bleaching are discussed. A number of curves, obtained by the use of various Calco fluorescent dyes, are shown illustrating points in the discussion.
WPU,jr. TTD: 10-48

Package dyeing. Package dyeing controls. Anon. *Am. Wool Cotton Reptr. 62*, 13-14 (Apr. 22, 1948).

Automatic time and temperature control in package dyeing improves operating efficiency. The Brown package dyeing control system provides for convenient setting of the temperature controller and timers, starting dye liquor flow in either direction, and easy shifting between manual and automatic operation. A diagramatic sketch of this system and a description of its operation is given. TTD: 10-48

Precision dyeing. Profitable precision dyeing. Arthur R. Wachter, Am. Viscose Corp. *Am. Wool Cotton Reptr. 61*, 25, 27 (Aug. 14, 1947).

The economy, and mechanical aspects, of continuous vat dyeing equipment and strict laboratory control are discussed.

Vat dyeing. Results obtained from vat dyeing half hose. J. C. Whitt, Century Hosiery Mills. *Am. Wool Cotton Reptr. 62*, 14, 48 (Apr. 22, 1948).

A summary of a lecture on the methods of vat dyeing men's half hose. TTD: 10-48

Vat dyeing. Practical experience in vat acid dyeing. J. H. Hennessey, Gen. Dyestuff Corp. *Am. Dyestuff Reptr. 36*, 775-77, 784 (Dec. 29, 1947).

Some practical aspects of vat acid dyeing are reviewed in this address. Particle size and methods of dispersion of the vat acid pigments, package dyeing, piece dyeing, the use of the vat acid method in continuous processes, and the application of this method to various fabrics are the principal subjects discussed.
WPU,jr. TTD: 10-48

Vat dyeing. The dyeing of woolen fibers and fabrics with vat colors. G. T. Hug, E. I. du Pont de Nemours & Co. *Am. Dyestuff Reptr. 37*, 365-73 (May 31, 1948).

Suitable methods of applying vat colors to woolen yarns and fabrics have been worked out on a laboratory scale and for some types of commercial dyeing operations. While it is already possible to duplicate dyeings in large-scale production, more work needs to be done in adapting the process to specific types of dyeing equipment, and in selecting dyes to give ultimate fastness properties. Dyeings which surpass other existing colors in fastness properties and leave the wool in an undamaged, excellent condition for further processing are produced if temperature, time cycles, and concentrations of caustic soda are properly controlled, coupled with proper selection of dyestuffs and treatment after dyeing. Automotive fabrics, upholstery and drapery fabrics, carpetings, men's summer suits, bathing suits and blank-

ets are among the items where the vat light-fast dyes are expected to find application.
WPU,jr. TTD: 10-48

Vat dyeing. Vat dyed shades on wool. Anon. *Am. Wool Cotton Reptr. 61,* 96-7 (Aug. 14, 1947).

Vat dyed wool shows excellent fastness to light, washing, bleaching, etc. Pastel shades may be obtained which were impossible with the usual wool dyes. TTD: 10-48

Novel use of dyes. Toy. Ellen G. & Richard E. Benson. USP 2 445 994, July 27, 1948.

A toy which consists of a cotton wash cloth dyed with curcumin or Brilliant Yellow is described. In normal water the cloth or pattern is yellow, while in soap suds of pH 9-11 the color changes to pink (Brilliant Yellow) or brownish-lavender (curcumin). Either or both dyes may be used on one cloth.
GNR TTD: 10-48

Printing VII 3

Designs. Design protection. I. Francois Hepp, Societe de Defense des Industries et Metieres D'Art. II. Sylvan Gotshal, Attorney. *Textile Colorist 70,* 20, 54 (Jan. 1948).

I. The advantages of a world-wide textile design law are briefly discussed. France has found such a system advantageous, and Cuba, Mexico, and Peru have expressed interest in the proposals before UNESCO.

II. The need for design protection laws in the United States, and H. R. 2860 are briefly discussed. TTD: 10-48

Designs. Blueprints for tomorrow's decorative fabrics. James Wynborough. *Textile Colorist 70,* 21-24 (Jan. 1948).

Designs of the future are briefly discussed. It is predicted that the designs will be simple, utilizing larger motifs in few colors, and of unlimited subject matter. TTD: 10-48

Photographic printing. Photo printing on fabrics. Anon. *Am. Wool Cotton Reptr. 62,* 47, 49 (Mar. 11, 1948).

Photographs may be printed on fabrics if the fabrics are treated in the same manner as photograph paper. The photo printing process is applicable to rayon, acetate, cotton, aralac, silk, velvets, and terry cloth; a soft "hand" is imparted to the fabrics. TTD: 10-48

Printing. Technique of printing rayon crepes. Colourist. *Textile Mfr. 73,* 571-73 (Dec. 1947).

Printing faults arising from the elasticity of crepe fabrics are discussed. Considerations involved in both the silk screen method and the engraved copper roller method of printing are given. Preparation of print pastes, ageing and steaming, and washing of crepe fabrics are also discussed briefly. TTD: 10-48

Printing pastes. Proper preparation prevents printing problems. T. N. Patrick. *Textile World 98,* 141, 282, 291 (Sept. 1948).

Directions are given for the proper preparation of several printing pastes to eliminate certain usual types of difficulties. The purpose of each of the usual constituents of printing pastes is discussed in detail. A proper understanding of these uses is necessary for continual perfect performance.
LCL TTD: 10-48

Resist printing. Fast-color resist prints from indigosol grounds. T. N. Patrick. *Textile World 98,* 131, 210, 216 (Aug. 1948).

The production of white and colored patterns on colored grounds is believed very practical with the use of indigosol fast-color resists which may be used either in dyeing or printing processes. Formulas and operating details are given for these particular materials and the paste in which they are used. For the best white effects, the resist-paste is printed on the cloth and dried before the padding liquid is applied. The resisting effect may be increased by fixation of the pigment by albumen or other means. Detailed information is given for correcting operating faults.
LCL TTD:10-48

Screen printing. Silk-screen processing. Anon. *Fibres 9,* 193 (May, 1948).

Pictorial Machinery, Ltd., has developed a new method of silk-screen printing which can print either a single unit or a multiple block and repeat it mechanically and accurately. The "Printex Junior" has been designed to accommodate a silk-screen frame 54 in. x 40 in. or smaller, and will print by repetition a unit up to 20 in. x 16 in. in either direction. TTD: 10-48

Screen printing. Thickenings for screen printing. Colourist. *Textile Mfr. 73,* 515-17 (Nov. 1947).

The functions of thickenings, and the various thickeners used in screen printing are discussed. The thickeners ore starch-tragacanth thickenings, vegetable mucilages, British gums, locust bean thickeners, and crystal gums. TTD: 10-48

SCREEN PRINTING. W. Taussig. Manchester, The Clayton Aniline Co., Ltd., 1947. No price quoted.

Reviewed in *J Textile Inst. 39*, P37-38 (Jan. 1948). TTD: 10-48

Measurement and defects VII 4

Crocking. Variables in crocking. Anon. *Am. Wool Cotton Reptr. 61*, 48 (Oct. 2, 1947).

Results of tests on dyed woolen fabrics show that crocking is usually caused by faulty dyeing procedures such as inadequate scouring and washing, hard water, and excess alkali residue. TTD: 10-48

Gas fading. Effect of laundering on gas fading performance of rayon fabrics. Frances K. Ray & Suzanne Davison, Pennsylvania State College. *Am. Dyestuff Reptr. 37*, 322-5 (May 17, 1948).

A preliminary laundering treatment, which consisted of washing material for 20 minutes at 38°C in 0.5% neutral soap solution, was studied as to its effect on the gas fading of 11 rayon fabrics representing a wide range of dye and finish types. Test on laundered and unlaundered specimens of each fabric showed that a one-exposure gas fading test produced no change in 8 fabrics, greater gas fading color change before laundering in 2 fabrics, and greater color change after laundering in one fabric. The performance of the fabrics could not be related to the dye or type of finish or to their original pH.
WPU,jr. TTD: 10-48

Gas fading. Development of controlled equipment for testing fastness to atmospheric gases. Frances K. Ray, Pennsylvania State College. *Am Dyestuff Reptr. 37*, 355-62 (May 31, 1948).

A previous article discussed the evaluation of *uncontrolled* equipment for gas fastness testing (See *TTD: 5*, 539). This article describes the gas fading chamber used, and the controls applied to it to obtain consistent reproducibility in test results. Rate of air flow, type and quantity of destructive gas, temperature and humidity were controlled carefully, the various methods employed being described in detail. The data obtained with the use of this controllable equipment will be presented in a future report.
WPU,jr. TTD: 10-48

Gas fading. A comparison of the effect on rayon fabrics of various gases under controlled conditions. Frances K. Ray & Pauline B. Mack, Pennsylvania State College, & F. Bonnet & A. H. Wachter, Am. Viscose Corp. *Am. Dyestuff Reptr. 37*, 391-96 (June 14, 1948).

A previous article (*Am. Dyestuff Reptr. 37*, 355-62 (May 31, 1948)) described the development of controlled equipment for testing fastness to atmospheric gases; this article describes some of the results obtained by use of such equipment. Of the gases used, the oxides of nitrogen caused by far the greatest color changes. These fadings were also most similar to those occurring during exposure under use conditions. None of the treatments used caused significant changes in wet bursting strength.
WPU,jr. TTD: 10-48

Infra-red radiation. Infra-red radiation. Anon. *Am. Wool Cotton Reptr. 61*, 75 (Aug. 14, 1947).

Results of experiments conducted at the Philadelphia Textile Institute show that the differences in the infra-red absorption characteristics of dyes used on fabrics are important factors in the warmth or coolness of the fabric. TTD: 10-48

Testing dyes. Application of spectrophotometry in textile industry: Testing dyestuff shipments. E. P. Mersereau & J. L. Barach, Alexander Smith & Sons Carpet Co. *Textile Research J. 18*, 436-9 (July, 1948).

Determination of dye strength by measuring the absorption of dye solutions with a General Electric Recording Spectrophotometer is described. This method of testing dye shipments gives an increased accuracy and precision and saves as much as ½ hr. per test over visual examination of dyeings to test dye shipments. TTD: 10-48

PROOFING VIII

Ageing of textiles. Some aspects of the ageing of coated fabrics. E. V. Painter, Fabric Research Laboratories. *Am. Dyestuff Reptr. 36*, 767-74 (Dec. 29, 1947).

Coated fabrics are composed of 2 separate systems which differ from each other both chemically and structurally. The ageing of coated fabrics is a result of the effects of (a) the individual resistance to degradation of each system, and (b) the interaction of the 2 systems. Tear strengths of coated fabrics are less than those of the original fabrics alone, and are usually reduced upon ageing, often so rapidly as to limit the useful life of the coated fabric. This effect is due to stiffening of the film on ageing. Cotton sheeting coated on

one side with Perbunan SC and nylon twill coated on each side with GR-S when aged in several different environments showed that tensile and tear strength changes on ageing are caused by 2 different mechanisms. The change in tensile strength was shown to depend upon the balance between the separate breaking extensions of the coating and the fabric. The loss in tear strength on ageing was shown to be the sum of the losses due to degradation of the fabric and to film-fabric interaction. The degradation loss was usually the more serious of the two.

WPU,jr. TTD: 10-48

Insect pests. U. K. insect pests; a survey of the species. Anon. *Fibres 9*, 254-5 (July, 1948).

The species of insects that are known to attack textile materials in the United Kingdom are few in number. The various insects are briefly discussed with respect to the nature of their attack and the ensuing damage. A table is given presenting the family, species, and common names. Incidence of damage of the insect pests is discussed. TTD: 10-48

Mothproofing. Chemical and physiological aspects of moth protection. H. Luttringhaus, Gen. Dyestuff Corp. *Am. Dyestuff Reptr. 37*, 57-62 (Jan. 26, 1948).

The chemical constitution of various mothproofing agents is described and their action explained. The physiology of the clothes moth is described and illustrated with a number of pictures. Exposure of wool to light or over-chlorination gives partial protection against clothes moths by a mechanism not yet clear.

WPU,jr. TTD: 10-48

Mothproofing agents. Moth protection chemicals. Hans Luttringhaus, Gen. Dyestuff Corp. *Am. Wool Cotton Reptr 61*, 91 (Nov. 27, 1947).

The various types of mothproofing agents and their chemical and physiological characteristics discussed. TTD: 10-48

Permanent finishes. Permanent finishes on rayon. Leonard Shapiro, Alrose Chemical Co. *Am. Dyestuff Reptr. 37*, P16-20, 29 (Jan. 12, 1948).

The chemical nature of various durable rayon finishes, which will not lose their desirable characteristics on laundering or dry-cleaning, are discussed in detail. These include pre-shrinkage and stabilization methods, crush-resistant finishes, thermoplastic resins, cellulosic compounds for imparting a permanent size, water repellents, mildewproofing, and softeners.

WPU,jr. TTD: 10-48

Redman process. Redman machine demonstrated. Anon. *Knitter 12*, 50, 53 (May, 1948).

An account is given of the first public demonstration of the Redman shrinking process for tubular knit goods on April 29 at Spring City, Pa. The machine has three principal parts: the normalizer, the dryer, and the calender. Tubular knit goods are delivered to the normalizer in a damp condition and passed through spreaders and over a large feed drum at the head of the shrinking unit into the conveyors. The cloth travels entirely without tension through five layers of conveyor belts where it is simultaneously shrunk and dried by hot air jets. No water or steam is used during the drying operation, although the machine makes provision for such application. The cloth is passed through squeeze rolls, subjected to steam spray, and passed into the calender where the shrinking and drying process is repeated. The goods emerge from the calender shrunken and dried. The Redman process reduces shrinkage to 5% or less. TTD: 10-48

Resloom. 960/320 . . . fine. Anon. *Monsanto Mag. 27*, 26 (Aug. 1948).

A brief account is given of a test of Resloom-treated woolen shirts in actual use. Three heavy-duty, navy-blue, regulation-issue wool shirts were issued to each of 320 uniformed policemen at Springfield, Mass. The shirts were washed by a variety of home methods, commercial washing methods, and dry cleaning with uniformly successful results. The only restriction imposed was not to boil the shirts. After 4½ months, none of the 960 shirts showed noticeable shrinkage.

TTD: 10-48

Shrink resistance in wool. Some aspects of the chlorination of wool to produce shrink resistance. Milton Harris & Daniel Frishman, Harris Research Laboratory. *Am. Dyestuff Reptr. 37*, 52-6 (Jan. 26, 1948).

"Relaxation shrinkage" and "felting shrinkage" of wool are defined. Structural features of wool conducive to felting are discussed, and an explanation made of how chlorination inhibits felting. A pH value of 5 in the chlorine solution produces a minimum loss in weight, while a pH of 8 to 9 produces a minimum alkali-solubility of the treated wool.

WPU,jr. TTD: 10-48

Shrink resistance in wool. Shrinkage control of wool by wet chlorination. Leonard Shapiro, Alrose Chemical Co. *Am. Dyestuff Reptr. 37*, 376-81 (May 31, 1948).

Various factors entering into shrinkage control of wool textiles, such as the characteristics of the wool fiber and the mechanism of wool felting, are discussed, and an acid and an alkaline wet chlorination process, both in commercial use, are described. TTD: 10-48

Shrink resistance in wool. Shrink control at top stage. Anon. *Am. Wool Cotton Reptr. 62,* 71 (Mar. 11, 1948).

"Harriset", a wet chlorination method for processing wool top to render it shrink-resistant, produces top which retains the original soft handle, texture, and appearance after repeated washings. Treated top will not become matty, boardy, or felted. TTD: 10-48

Shrink resistance in wool. W. C. Idol, Jr. *Knitter 12,* 36, 38 (June, 1948).

A new process of wool shrinkage control has been announced by Scholler Bros., Inc. Wool is treated by a chemical process that makes it practically shrinkproof for the life of the fabric. Matting is eliminated and all the natural resiliency, elasticity, softness, texture, and comfort of wool are retained. "Schollerized" wool requires no particular care in washing. The process is a wet chlorination process, controlled to definite uniformity. It may be used on any fabric that contains wool. In a test on men's socks, untreated socks shrank 17.4% and Schollerized socks shrank only 1.5% after washing five minutes. TTD: 10-48

Shrink resistance in wool. No wool is "Shrinkproof" . . . yet. F. E. Ackerman, American Wool Council. *Textile Colorist 70,* 30, 50 (April, 1948).

Current misconceptions regarding the shrinkproofness of woolen goods are the outgrowth of exaggerated claims by manufacturers and finishers, brought about by competition. The American Wool Council, taking cognizance of the situation, has joined a number of mills and chemical companies in requesting the Federal Trade Commission to formulate fair trade practices in the promotion and marketing of shrink resistant processes for wool textiles. The proposed code is outlined. TTD: 10-48

Shrinkage. Shrinkage of certain cotton woven fabrics caused by various laundering and pressing procedures. Hazel M. Fletcher & M. Virginia Jones, USDA. *Am. Dyestuff Reptr. 36,* 727-9 (Dec. 15, 1947).

Mechanical action was shown to affect the amount a woven cotton fabric shrinks when washed and pressed. In home laundering, where the samples

were subjected to mild mechanical action in the washing, the shrinkage was consistently less, regardless of the method of pressing, than when the fabrics were subjected to mechanical action both in the wash wheel and in the tumbler during drying. A Nation Bureau of Standards standard test procedure for determining shrinkage due to washing in cotton and linen woven fabrics is satisfactory in predicting the shrinkage caused by commercial laundering. In such cases, shrinkage measurements should be run on multiple tests of 4 or 5 launderings. The method of pressing also affects the amount of shrinkage. A procedure in which tension is exerted along the warp and filling of the fabric results in considerably less shrinkage than a procedure in which no tension is exerted. WPU,jr. TTD: 10-48

Shrinkage. The shrinkage of cotton and rayon. Its cause and prevention. J. T. Marsh. Textile Congress, Amsterdam, Oct. 11, 1947. *Textielwezen 4,* 35-9 (Feb. 1948).

Some data are given on the potential laundry shrinkage of various kinds of cloth which were published originally by the Bradford Dyer's Association. Shrinkage is attributed to actual fabric structure. Methods of preventing shrinkage are classified as follows: A. Mechanical, (1) Adapted stenters, and (2) compressive shrinkage; B. Physico-chemical, including (1) the use of resins (such as the crease-resisting process of the Tootal Broadhurst Lee Co.), and (2) alkali (such as the definized process for treating rayon with concentrated NaOH solution; C. Chemical treatment (such as the treatment with aldehydes, including the use of the di-aldehyde, glyocal); D. Tensionless finishing (by rippling the fabric onto endless blankets or by floating the fabric on the liquors used to treat them. TTD: 10-48

Water repellency. Imparting water-repellency to textiles by chemical methods: Review of literature. H. A. Schuyten, J. David Reid, J. W. Weaver, & John G. Frick, Jr., Southern Regional Research Laboratory. *Textile Research J. 18,* 396-415 (July, 1948).

The articles and patents dealing with the imparting of water-repellency to textiles by chemical methods are classified on the basis of the type of compound used to impart water-repellency. The first 2 groups, (1) acid halides, anhydrides, and other esterifying agents, and (2) quarternary nitrogen compounds, are surveyed with the chemical reactions, where known, described with the aid of equations. TTD: 10-48

Water repellents. Water-repellents and their preparation. J. R. Geigy S. A. French P. 918 396, Feb. 6, 1947, *Chimie et Industrie 59,* 587 (June, 1948).

Condensation products of carbonic acid derivatives with guanidine compounds are treated, in acid medium, with an excess of formaldehyde until water-soluble compounds are obtained.

TTD: 10-48

Water-resistant fabrics. Water resistant fabric treatments. R. A. Pingree, Warwick Chemical Div., Sun Chemical Co. *Am. Dyestuff Reptr. 37,* 440-42 (June 28, 1948).

This is an address in which the nature of water-resistant treatments, the test methods applied to treated fabrics, preparation of cloth for application of the water-repellent material, preparation of the water-repellent bath and application of the bath to cloth, and the nature of both the renewable and the durable types of water-repellents are briefly reviewed.

WPU,jr. TTD: 10-48

IMPARTING WATER-REPELLENCY TO TEXTILES BY CHEMICAL METHODS: INDEX OF COMPOUNDS USED. H. A. Schuyten, J. David Reid, J. W. Weaver, & John C. Frick, Jr., USDA, Bur. of Agricultural & Industrial Chemistry, June 1, 1948; 93 pp.

Reviewed in *Textile Research J. 18,* 440 (July, 1948). TTD: 10-48

TESTING AND ANALYSIS IX

Launderability. Textiles in the laundry. F. R. Hill. *J. Textile Inst. 38,* P423-30 (Sept. 1947).

The processes and equipment used in commercial laundries are briefly described. The behavior of various textile fabrics under laundry treatment and the importance of proper processing of the different types of fibers is discussed. All stages in the production of launderable textile goods have an influence on the launderability of those goods. It is recommended that all fabrics be correctly identified as to type of fiber or method of washing to be followed. This is particularly true since a large number of synthetic fibers and blends with widely varying properties are on the market.

TTD: 10-48

Measuring temperature and humidity. Measurement of temperature and relative humidity on the skin and clothing of a human subject. L. W. Ogden & W. H. Rees. *J. Textile Inst. 38,* T371-86 (Nov. 1947).

Temperature and relative humidity at the skin surface and between various layers of garments of a clothed human subject were measured; the method and apparatus employed are described. Continuous values of temperature and relative humidity were obtained with the subject undergoing various degrees of activity. Skin temperature of the trunk was found to be about 30°C and the relative humidity at the skin in the region of 30%-40% when the subject was resting. Use of a standard test-garment of known resistance to flow of heat and water vapor permits the rate of flow of heat and water vapor through the clothing to be calculated. TTD: 10-48

Microscopy. The microscopy of textile fibres: aids to their identification. A. B. Wildman. *J. Textile Inst. 38,* P468-73 (Oct. 1947).

The importance of the microscope in the identification of animal fibers is stressed and methods and techniques of analysis and identification are given. Methods for the quantitative analysis of mixtures of animal fibers are discussed briefly.

TTD: 10-48

Military fabrics. Forecasting military fabrics with frigid facts. F. B. Ladd. *Textile Colorist 70,* 23-31 (Feb. 1948).

The textiles used in "Exercise Snowdrop", a U. S. Army exercise under arctic conditions, are discussed with reference to their performance in actual field tests. The limitations and advantages of various fabrics are given, and development of future fabrics is briefly outlined. TTD: 10-48

Photography. The aid photography gives to research in the jute and canvas industry. Andre Page. *Jute & Canvas Rev. 19,* 16 (May, 1948).

The uses of photomicrography in the study of textile fibers and fabrics are discussed briefly.

TTD: 10-48

Quality control. Quality control testing. E. J. Donohoe, U. S. Testing Co. *Am. Wool Cotton Reptr. 61,* 27, 29, 31, 33 (Oct. 16, 1947).

The importance of quality control testing for improved production is discussed and examples of the work in control testing done at the United States Testing Company are described.

TTD: 10-48

Quality control. Cotton quality control. E. J. Donohoe, U. S. Testing Co. *Am. Wool Cotton Reptr. 61,* 9-10, 42 (Oct. 23, 1947).

Moisture regain, methods of determining variations in combed yarn, percentage of different

fibers in multi-blended yarns, and nip counts to predict yarn manufacturing qualities are considered in a series of questions and answers.

TTD: 10-48

Textile testing. Service wearing tests. E. N. Ditton, Gotham Hosiery Co., Inc. *ASTM Bull.* 93-4 (May, 1948).

The importance of service testing as a preliminary to devising laboratory tests is stressed. Suggestions are given for planning and executing service tests that will give reliable results. TTD: 10-48

Textile testing. The tearing strength of textiles, investigation of methods of test. J. Creswick. *J. Textile Inst. 38,* T307-17 (Sept. 1947).

Various well-known and some new methods of assessing the resistance to tearing of textiles are described. Fabrics tested varied from nylon parachute fabric, weighing 1.6 oz. per square yard, to cotton canvas, weighing 22 oz. per square yard. Results are presented in tables and graphs, and diagrams of testing apparatus are given.

TTD: 10-48

Wool testing. Wool testing houses. Morton Savell, International Wool Secretariat in America. *Textile Colorist 70,* 18 (Jan. 1948).

The South African Wool Board has announced that it has accepted the principle that testing houses are essential. Establishment of one or more testing houses in South Africa, modeled after two units erected in Australia during the war, has been recommended. The value of wool testing houses and how they can benefit both producer and consumer is discussed briefly.

TTD: 10-48

A Serviceability Study Comparing An All-Cotton Chambray With A Chambray Of Cotton Warp And Viscose Rayon Filling. Pauline E. Keeney, Ann Watson, Henrietta M. Thompson, Dept. Clothing, Textiles and Related Art, School of Home Economics, University of Alabama. (*Univ. of Alabama Bull 41,* No. 7, June 1, 1947).

The results of wearing and laundering blouses made of these fabrics is described. TTD: 10-48

Physical properties IX 1

Electron microscopy. Wool study simplified by microscopy. Anon. *Am. Wool Cotton Reptr. 62,* 14 (July 29, 1948).

A simplified shadow-casting replica technique which makes possible the greater use of electron microscopy is described. The structural study of

the wool fiber, both in its natural state and after various treatments, made possible by this technique, tends to confirm the theory that the wool fiber has an amophous covering. TTD: 10-48

Testing. Textile testing equipment. Josephine M. Blandford, Natl. Bur. Standards. Letter Circular LC907, May 19, 1948.

Textile testing equipment is listed alphabetically and the names and addresses of dealers given for each type of apparatus. References are also given to general textile testing methods, including Federal and ASTM specifications and to research papers of the Natl. Bur. of Standards on this subject. TTD: 10-48

Water-repellency test. Testing for water-repellency; the Bundesmann machine. Anon. *Fibres 9,* 106 (Mar. 1948).

The Bundesmann method of testing water-repellency has been known for years, but has recently assumed special interest as the result of increasing employment of the method in Great Britain. This method more closely approaches the conditions encountered during exposure to heavy rain than any other test yet devised. The test, in addition to exposure to artificial rain, flexes and rubs the unexposed side of the fabric to simulate normal movement of a fabric being worn. Water-repellency is assessed by measuring the amount of water absorbed by the patterns as a result of exposure in the Bundesmann tester, and by measuring the amount of water forced through the pattern during the period of the test. TTD: 10-48

Water resistance test. Hydrodynamic test for water resistance. J. H. Skinkle & M. S. Lyra, Lowell Textile Inst. *Am. Dyestuff Reptr. 37,* 340-3, 348 (May 17, 1948).

A new test for water resistance of fabrics is described. The test involves the spraying of the fabric with a spray of increasing and measured kinetic energy until an end point similar to that obtained in the hydrostatic test indicates failure of the fabric. The hydrostatic test end point is the appearance of the third drop on the opposite side of the fabric from which the water is applied. This end point may be correlated with intensity of rainfall. Data given indicate that the new hydrodynamic test furnishes an index number by which the water resistance of different fabrics may be compared.

WPU,jr. TTD: 10-48

Wrinkle recovery. New device tests wrinkle recovery. Anon. *Am. Wool Cotton Reptr. 61,* 11 (Oct. 23, 1947).

The amount of wrinkle resistance of a fabric is determined by the Monsanto Wrinkle Recovery Tester which measures the amount of "bounce" in a treated fabric after it has been creased.

TTD: 10-48

Yarn abrasion test. Taber yarn-sheet abrasion test. E. M. Hicks & A. G. Scroggie, E. I. du Pont de Nemours & Co. *Textile Research J. 18,* 416-23 (July, 1948).

A method for determining yarn abrasion-resistance is based on a sheet of parallel yarns wound under controlled tension and abraded to failure on the Taber Abraser. The results obtained by this method correlate well with the Taber abrasion-resistance of fabrics made from these yarns. Thus the yarn sheet test eliminates the necessity of fabric preparation in the determining of the abrasion-resistance of a yarn type. TTD: 10-48

Chemical analysis IX 2

Detergents. The quantitative analysis of synthetic detergents. D. A. Shiraeff, Gen. Dyestuff Corp. *Am. Dyestuff Reptr. 37,* 411-14 (June 14, 1948).

The reaction between a sulfonic acid and benzidine hydrochloride previously used for the quantitative analysis of Igepon T (*Am. Dyestuff Reptr. 36,* 313-14 (June 16, 1947); TTD: *5,* 208)) has been extended to other detergents containing sulfonic acid groups, especially the alkylarylsulfonates.

WPU,jr. TTD: 10-48

TEXTILE MILLS X

Textile industry. Textile mills 60 years ago. Anon. *Am. Wool Cotton Reptr. 62,* 99, 101, 103 (Feb. 12, 1948).

The history of the growth of the textile industry is briefly reviewed, and a comparison is made of present mills and mills of 60 years ago.

TTD: 10-48

Textile industry. Textile migration continues. Wm. B. Dall. *Textile World 98,* 99, 182-8 (Aug. 1948).

Based on employment figures, the migration of textile industry from the Northeast to the South and other portions of the country continues, but with decreasing rate. Since 1939, the North has lost 4.3%, the South gained 3.8% and the West 4.5%. Nevertheless, the Northeast has still 50.4% of the entire textile industry. Of the total industrial labor employed, the New England states tex-

tile industry has 20% for that area, the Middle Atlantic 7%, and the Southeast 32%. TTD: 10-48

Textile diary, 1948. London, Wm. Collins, Son & Co., Ltd. 256 pp.; No. 3104; price 3/8d & 4/3½d.

Reviewed in *J. Textile Inst. 38,* P475 (Oct. 1947). TTD: 10-48

Buildings, machinery, power X 1

Aluminum in textile machines. Aluminum for textile machines. Anon. *Am. Wool Cotton Reptr. 61,* 9-10 (July 31, 1947).

Extruded shapes of aluminum, for use on textile machinery, save machining time and cost, have the advantage of lighter weight, and offer a flexible process of manufacture due to the low cost of extrusion dies. In addition the workability of aluminum permits more intricate shapes and larger sizes of parts than many other metals. TTD: 10-48

Aluminum in textile machines. Aluminum extrusions in textile machinery. H. V. Menking, Reynolds Metals Co. *Textile Forum 5,* 20-30 (Summer, 1948).

Advantages of aluminum extrusions in textile machinery manufacture are discussed, and the mechanical and physical properties of some aluminum alloys are described. Examples are cited where aluminum extrusions have replaced steel, cast iron, and wood construction in various textile machines. TTD: 10-48

Aluminum in textile machines. Aluminum widely used on textile machines. H. V. Menking, Reynolds Metal Co. *Textile World 98,* 126-29 Sept. 1948).

Aluminum is finding increasing usage in the textile machinery and equipment trade. Its lightness and strength permit reduction of dead weight, thereby decreasing the inertia of machine parts which rotate or reciprocate at high speeds. Operating speeds can then be increased and the machines will run more smoothly. Shipping costs will likewise be lessened and manual handling will be made easier and safer. Because of its corrosion resistance, maintenance cost is low. Various devices used in the textile machinery industry and the aluminum materials used in their manufacture are described. Other articles will follow.

LCL TTD: 10-48

Boiler feedwater. Boiler feedwater treatment can produce savings. V. J. Calise. *Textile World 98,* 137, 302, 304 (Sept. 1948).

Unsuitable feed water can result in a waste of fuel and considerable tube damage particularly under high pressure boiler requirements. Undesirable results are, (1) insulating effect of scale, (2) repair cost resulting from corrosion or cracking of boiler tubes and shell, (3) cost of more frequent cleaning of boilers, etc., (4) increased investment necessary for additional capacity to allow for rotation while cleaning, (5) decreased efficiency and (6) increased depreciation of equipment. In very general terms, boiler feedwater should be clear, soft, free from oil, oxygen, slightly alkaline, and low in silica content. High pressure operations require a closer limitation on each of these items. Proper conditioning will prevent corrosion losses and can be accomplished generally by decreasing the pH of the water, by addition of phosphates, chromates, or other inhibitors, and by removal of the oxygen by vacuum or chemical treatment.

LCL TTD: 10-48

Control devices. Principles of automatic control. Geo. A. Philbrick & Wilmoth H. Kidd. *Chem Eng. Progress 44*, 675-80 (Sept. 1948).

An automatic controller will not control any and every possible variable within an industry or a process. By proper analysis of the variables which might be met and their effect on the process, the proper design and installation of an automatic controller is possible. Such a controller either opens or closes a valve, electric switch or some other mechanism in response to a change in a process variable. The simplest type of controller is one that opens and closes fully with each change in response. The more complex instruments open and close at different rates, depending upon the desired effect of the process handled. These operations and their proper application are discussed in great detail with several clear sketches.

LCL TTD: 10-48

Drive. Re-beaming. Anon. *Fibres 9*, 115 (Mar. 1948).

A device comprising two 3-step pulleys, and utilizing V-belts containing steel cables, facilitates re-beaming in the beam dyeing trade. J. H. Fenner & Co., Ltd. (England) recently introduced the device which also uses a ball-bearing jockey pulley with a quick release handle for relieving tension. Three winding speeds may be obtained on a 400-lb. warp beam. The steel cable V-belt is responsible for the success of the new drive. A production increase of 84% was obtained in one installation.

TTD: 10-48

High-speed belt. High-speed belt. Lee W. Mitchell (to Gates Rubber Co.). USP 2 446 294, Aug. 3, 1948.

In many types of machines, and more especially in connection with high speed machinery, such as textile manufacturing and grinding machines, the construction requires power to be transmitted by belts at a very high speed. For such power transmission, strong but very flexible belts are necessary which are capable of transmitting the necessary power and also of flexing at a very high rate around comparatively small pulleys. It is the object of this invention to produce a flat belt designed for very high speed power transmission and of a construction that makes it very flexible. Briefly described, the belt consists of a central transversely flat core of cords wound spirally in the direction of the belt. This core is covered on either one or both sides with a knitted fabric and several layers, adhesively interconnected by rubber composition or some material having rubber-like properties. TTD: 10-48

Machine drives. New and old machinery drives. Anon. *Am. Wool Cotton Reptr. 62*, 125, 127, 130 (Feb. 12, 1948).

The development of power equipment for textile machinery from the water wheel to individual motors is reviewed. TTD: 10-48

Machine drives. Electric drives for textile finishing ranges. R. B. Moore & H. C. Uhl. *Elec. Eng. 66*, 667-69 (July, 1947).

Carefully co-ordinated, adjustable-speed machine drives for the continuous finishing of textiles are described. The article gives general information on textile ranges, basic requirements of range drives, basic considerations in selecting drive equipment, comparison of electric and mechanical drives, descriptions of various types of electrical drives and co-ordination control, and recommendations for selecting proper equipment for specific conditions.

CAC TTD: 10-48

Machinery. Plastics as engineering materials. Anon. *Product Eng. 19*, 129-52 (Sept. 1948).

Because of their toughness and chemical resistance, plastics lend themselves readily to production of textile machinery. Textile machine bobbins injection molded from ethyl cellulose, a rayon gooseneck of Saran, and nylon flyer blocks are described. TTD: 10-48

Machinery progress. Textile machinery progress.

Anon. *Am. Wool Cotton Reptr 62*, 105, 107, 109 (Feb. 12, 1948).

A survey is given of the improvements and major advances in textile processing machinery.

TTD: 10-48

Mill modernization. Utica & Mohawk progress. Anon. *Am. Wool Cotton Reptr. 61*, 17-18, 58 (July 17, 1947).

New machinery and equipment installed (at the Utica and Mohawk Cotton Mills) is discussed.

Mills. Mill building at new high. Anon. *Am. Wool Cotton Reptr. 62*, 213, 215, 217, 219, 221 (Feb. 12, 1948).

New mill constructions and mill modernizations in 1947 are reviewed. The greater portion of the construction is in the southern states.

TTD: 10-48

Thermal insulation. Durisol in the service of the textile industry. Anon. *Textielwezen 4*, 13 (Apr. 1948).

Durisol is made from chemically treated short fibers by agglomerating them with portland cement in a concrete mixer. It has 15 times the insulating value of concrete. It may be sawed and nailed. Hollow blocks of Durisol may be set up dry. They may be filled with concrete to serve as supporting columns. Durisol walls and ceilings will prevent condensation of moisture in winter in places where the relative humidity reaches 80%, and they will diminish considerably the noise of machinery. It is recommended for use in textile plants and can be used as a nonreturnable insulating boxing material. It is now produced in the U. S., Czechoslovakia, Switzerland, Holland, and Belgium. TTD: 10-48

Thermocouples. Thermocouple tube with exposed junction. Carlton S. Tegge (to The Brown Instrument Co.). USP 2 445 159, July 13, 1948.

A thermocouple assembly is described which allows the function of the thermocouple to be exposed to the medium whose temperature is being measured and at the same time provides a pressure tight seal for a protecting tube. The device provides a fast response to temperature changes and may be used in places where ordinary thermocouple constructions are unsatisfactory because of the lag in measuring temperature changes.

VBS TTD: 10-48

V Belt. Wedge belt. Raymond S. Carter & Marvin L. Dorf (to Wingfoot Corp.). USP 2 442 037, May 25, 1948.

The inextensible reinforcing cords or wires of a

V type belt are supported radially, thereby distributing the load evenly over all these elements.

JHB TTD: 10-48

Water purification. Purification of raw waters. Harold R. Hay (to Philadelphia Quartz Co.). USP 2 444 774, July 6, 1948.

A method is described for the preparation of a coagulation aid for use in water purification. The coagulation aid contains ammonium silicate and its hydrolytic products.

EA TTD: 10-48

Lighting and air X 2

Air conditioning. Air conditioning apparatus. Thos. W. Carraway. USP 2 437 936, Mar. 16, 1948.

Apparatus is provided for the economical washing of the filter with a cleaning fluid which may be recirculated.

JHB TTD: 10-48

Air control. Air in opening-picking rooms. Anon. *Am. Wool Cotton Reptr. 61*, 11-12, 42 (Aug. 21, 1947).

The textile filter eliminates the problems of preconditioning stock, disposal of discharged air, and disagreeable atmosphere. The operation of the 3 main types of filters used in mills, the wire-mesh filter, the bag filter, and the revolving screen filter, are described. TTD: 10-48

Air control valve. Air flow control valve. Friedrich Honerkamp & Franz J. Kurth (to Anemostat Corp. of Am.). USP 2 443 071, June 8, 1948.

By means of rotative adjustments of a single element in a valve comprising 2 elements, each element having 2 annular rows of openings, a wide range of variations in the flow of air through the valve is permitted.

JHB TTD: 10-48

Dust removal. Dust removal from textile factories; modern practices. C. E. Shuttleworth. *Fibres 9*, 236-38 (June, 1948).

A report on a paper presented at the Institution of Heating and Ventilating Engineers, April 28, is given. The problem of dust in cotton opening and carding rooms is discussed briefly. Mention is also made of the jute and linen industry with reference to dust problems. TTD: 10-48

Humidification. Role of humidification is stressed. Franklin C. Wertheim, Abbeon Supply Co. (Report of talk given at knitting forum, International Textile Machinery, Equipment and

Supplies Exposition) *Knitter 12*, 35 (June, 1948).

The importance of proper humidification in the knitting industry is discussed. Humidifying of knitting departments as well as storage rooms is recommended, and the proper relative humidities for stock storage, warping, winding, and knitting of wool, cotton, and rayon yarns are given.

TTD: 10-48

Humidifier. Humidifier. Jos. J. Rozner. USP 2 446 665, Aug. 10, 1948.

The object of this invention is to provide a simple, sturdy device, capable of being economically manufactured and easily installed, that may be associated with a steam radiator for the purpose of disseminating water vapor by fan action. A salient feature of the invention is that the fan is driven by a fluid actuated impeller operating in a suitable housing that intakes impeller-motivating steam from the radiator and exhausts water vapor into the ambit of the fan. TTD: 10-48

Wastes X 3

Industrial wastes. Pollution abatements. Appraisal of Current Regulations. Anthony Anable & R. P. Kite, The Door Company. *Chem. Eng. Progress 44*, 3-16 (Jan. 1948).

A factual background concerning antistream pollution legislation in the United States, its territories, and the Dominion of Canada is given as a guide to the chemical and allied processing industries in facing faste-disposal problems and formulating plans for their solution. TTD: 10-48

Process water control. Textile water corrosion control. Anon. *Am. Wool Cotton Reptr 61*, 15, 17 (Nov. 20, 1947).

Waters used for processing textiles are corrosive because the oxygen and carbon dioxide in the soft water attack the iron of the pipe line. The addition of Calgon to the process water inhibits this attack by forming a thin film on the surface of the pipe line. The Calgon should be added after any softening treatment. TTD: 10-48

Hazards; operations; efficiency X 4

Accident prevention. Why not a safe mill? W. F. Humbert, Fieldcrest Mills. *Am. Wool Cotton Reptr. 61*, 57, 59, 61, 63, 65 (Dec. 18, 1947).

An accident-prevention plan is discussed and various precautionary measures against accidents are noted. TTD: 10-48

Accident prevention. Safety program can cut finishing accidents. Frank S. Elroy & Geo. R. McCormack. *Textile World 98*, 125, 222, 228 (Aug. 1948).

During the 12 years in which the Bureau of Labor Statistics has kept injury rates for the textile dyeing and finishing operations, this branch of the textile industry has had the poorest accident record of all divisions of textile manufacturing. The accident costs are calculated as 4 times those of the compensation and medical payments. Among the causes of the accidents reported are falls on slippery floors, improper use of materials handling equipment, the lack of proper lifting equipment or insufficient help for lifting heavy objects, improper use of hand tools such as knives and so forth, chemical burns and dermatitis, burns from threading heated dry cans, splashing of hot, chemical starch pastes, etc., or breaking of glass containers, and poor housekeeping. An adequate safety program is believed capable of reducing substantially such safety costs.

LCL TTD: 10-48

Fire prevention. Textile process fire losses. R. G. Shepherd, Associated Factory Mutual Fire Insurance Co. *Am. Wool Cotton Reptr. 62*, 15-16 (Jan. 15, 1948).

The 3 main causes of fires in textile processing are foreign materials in the stock, friction, and electrical failures. Suggested methods for correcting the conditions leading to these causes are discussed. TTD: 10-48

Fire prevention. Humidification cuts picker-room fires. R. G. Shepherd. *Textile World 98*, 110-11 (Aug. 1948).

The Factory Mutual Fire Insurance Companies have conducted a series of tests to determine the principal causes of fires in textile mills. Since most of these fires occur in the opener and picker rooms, most of their work was done on cotton lint. It was found that the 4 principal factors influencing rate of flame spread were (1) moisture content, (2) density, (3) position or angle of inclination and (4) surrounding air movement. It was also found that a slight differential in the regain of the cotton made considerable difference in the ignition from incipient sources. The safety zone appears to start in the regain neighborhood of 6.5% to 7%. A relative humidity of 50% to 60%, figured on a basis of 70°F, reduces the fire-frequency probability a great deal. Below 6% regain, cotton fiber becomes increasingly susceptible to ignition by sparks, and an increased rate

of flame spread becomes a more serious possibility.
LCL TTD: 10-48

Heat exhaustion. Ten ways given to combat heat exhaustion. W. Schweisheimer. *Textile World 98*, 133, 220, 221 (Aug. 1948).

Studies on heat exhaustion among industrial workers have revealed 2 types, one occurring early in the summer, and the second occurring later after the first period has passed. The first type is believed to be caused by slow adjustment of the workers, and the second by insufficient sweating. Salt tablets and water are considered as general remedies for either, although change in climate is frequently necessary for those suffering from the second type of exhaustion. Ten ways of combatting heat exhaustion are given.
LCL TTD: 10-48

Improved cloth-room. Cloth- room capacity doubled by modernization. H. S. Knowlton. *Textile World 98*, 104-05 (Aug. 1948).

The cloth room of the Maverick Mills, East Boston, Mass., has been doubled in capacity by a new layout and several types of new equipment. A thorough study of equipment needs was made, and a scale model was constructed for purposes of locating the machinery and arranging for straight-line inspection. This scale model was of exceptional importance in the final layout.
LCL TTD: 10-48

Increased efficiency. Cotton output and redeployment; the Musgrave results. Anon. *Fibres 9*, 226 (June, 1948).

Results of a redeployment test undertaken by the Cotton Board in the cardroom of Musgrave No. 7 Mill, Bolton (England) are noted. Duties of operatives were reassigned, some rearrangement of machinery was made, and larger cans were used at the cards and combers. Surveys by the Shirley Institute before and after redeployment showed the following results: Number of operatives was reduced 21%; cardroom output per hour was increased 15%; operative hours per 100 lb. were reduced 28%, and production per man hour increased 39%; new wages of re-deployed operatives were increased by 30%; labor cost per pound was reduced by nearly 10%. The Musgrave workers have since agreed to accept the new methods permanently and operatives at other mills of the company have asked to be put on the same system.
TTD: 10-48

Materials handling. With the greatest of ease. Anon. *Modern Materials Handling 3*, 42 (June, 1948).

The use of tramrail equipment to handle beams of rayon from storage to the twisters and to return empty beams to storage in Excelsior Mills No. 2, Clemson, S. C., is briefly noted. Features of the installation are illustrated by photographs.
TTD: 10-48

Materials handling. Materials handling promoted by G. E. Program. Anon. *Textile World 98*, 127 (Aug. 1948).

The General Electric Company has released another unit in its "More Power to America Series", entitled, "Materials Handling in Receiving, Warehousing, and Shipping." The new film, in color, illustrates the contrasts in old and new methods of materials-handling.
LCL TTD: 10-48

Meals for employees. On-the-job feeding brings hot meals to knitters. C. Mallard Bowden. *Textile World 98*, 114, 115 (Aug. 1948).

The Pilot Full-Fashion Mill, Valdese, N. C., has a modern and elaborate industrial feeding system to furnish hot meals on the job to skilled workers and other employees who cannot leave their machines to visit the cafeteria, and to third-shift employees. Details of its operation are given. Employee health, efficiency and morale are noticeably increased.
LCL TTD: 10-48

Spinning. Statistical studies of labour utilization in spinning. P. D. Vincent, *J. Textile Inst. 38*, P500-05 (Nov. 1947).

A discussion of OHP (operative hours per unit of production) in spinning is given. Methods and techniques, based on earlier work by the Shirley Institute, are discussed and described. TTD: 10-48

Statistical quality control. Quality control in the textile industry. L. H. C. Tippett. *J. Textile Inst. 38*, P594-600 (Dec. 1947).

Control of raw material, sampling, and control in the factory are discussed with reference to a hosiery factory knitting socks. TTD: 10-48

THE INDUSTRIAL TRAINING OF YOUNG WEAVING WORKERS (L'Apprentissage dans l'Industrie Textile.) Ch. Labriffe. Les Editions de L'Industrie Textile, 36 Rue Ballu, Paris IXe.

Reviewed in *J. Textile Inst. 38*, P480-81 (Oct. 1947). TTD: 10-48

BASIC SCIENCES XI

Adhesives. Theory of the adhesion of high polymers to cellulose. A. D. McLaren & C. H.

Hofrichter, Jr., E. I. du Pont de Nemours & Co. *Paper Trade J. 125*, 96, 98-100 (Nov. 6, 1947).

The adhesion of high polymers to cellulose involves a number of physical factors, including the dielectric constant of the polymer, the dipole moment of polymer constituents, the facilities for hydrogen bonding at the polymer-cellulose interface, and micro-Brownian movements of the chain segments. This paper considers the influence of polar group concentration and polymer viscosity. The concentration of carboxyl groups was varied in polymer compositions and a vinyl acetate-vinyl chloride copolymer mixed with a vinyl acetate-vinyl chloride-maleic anhydride interpolymer. Such compositions were coated on regenerated cellulose. The adhesion to this material, which was assumed to be a measure of the COOH→OH dipole-dipole bonds formed, increases in a manner expressible by: Adhesion = k $(COOH)^n$, similar to the Freundlich sorption isotherm. At any given carboxyl concentration, adhesion increases with temperature. Theories of polymer adhesion to cellulose, based on the above and other observations, are developed and presented.
WPU,jr. TTD: 10-48

Analysis. Polarized infra-red radiation as an aid to the structural analyses of long-chain polymers. I. A. Elliott, E. J. Ambrose & R. B. Temple, Courtaulds, Ltd. *J. Chem. Physics 16*, 877-86 (Sept. 1948).

An experimental procedure is described for measuring dichroism in the infra-red spectrum of oriented materials. Oriented films of polythene, polyvinyl alcohol, polyvinyl chloride, polyvinyl acetate and nylon have been examined in the region 3600-700 cm^{-1}, and the species of many bands has been identified. Because of its planar orientation and crystallinity, nylon-66 is considered a suitable material for future study. TTD: 10-48

Cellulose. Investigation of the properties of cellulose oxidized by nitrogen dioxide. VI. The effect of alkali on celluronic acids. P. A. McGee, W. F. Fowler, Jr., C. C. Unruth & W. D. Kenyon. *J. Am. Chem. Soc. 70*, 2700-05 (Aug. 1948).

Celluronic acids were prepared by treating oven-dried 500-second cotton linters with carbon tetrachloride solutions of nitrogen tetroxide for various periods of time to produce the desired degree of oxidation. Potentiometric investigations show that celluronic acids degrade in alkaline solution to generate acidity. Small amounts of carbonyl

groups appear to be present in the acids. The ketone groups enolize in alkali, the enediols split as in simple carbohydrates, the adjacent glucoside links hydrolyze, and an extensive alkaline degradation is initiated. TTD: 10-48

Linear molecules. Note on an equation of state for linear macromolecules in monolayers. S. J. Singer. *J. Chem. Physics 16*, 872-76 (Sept. 1948).

An equation of state for monolayers of large, threadlike molecules, based on the highly idealized quasi-lattice model, is presented. This equation may be applied to synthetic polymer films and in some cases to those of proteins. TTD: 10-48

TEXTILE RESEARCH XII

Courtaulds' developments. New fields for rayon; work of Courtaulds Use-Development Organization. Anon. *Fibres 9*, 278-79 (July, 1948).

New developments by Courtaulds, Ltd., include: 1) Calcium Alginate, a thread made from seaweed, used to strengthen extra fine wool yarns during weaving. After weaving, the Alginate, which is soluble in alkaline solution, is scoured out of the cloth, leaving a wool fabric as fine as georgette. Alginate cords also find application in knitting, 2) Alginate fiber can be used as a support for de-twisted cotton. Cotton yarn is back twisted with a fine denier Alginate yarn and the twist removed. The Alginate spiral holds the parallelized cotton fibers together and gives them sufficient strength for weaving and knitting. Fabrics made of this yarn are soft and silky in handle, and in some instances are stronger than normal cotton fabrics, 3) "Fibro" has been developed for use as pile in carpets and upholstery fabrics; "Rayolanda" is being developed as a filling for upholstery, mattresses, etc, 4) Non-woven fabrics are being developed and produced so cheaply that they can be thrown away after use. Hand-towels, curtains, and dish cloths are some of the articles being made by this method.
TTD: 10-48

Fabrics. Fabrics of future. Anon. *Am. Wool Cotton Reptr. 62*, 11-13 (Apr. 15, 1948).

Illustrated descriptions of a few of the many types of fabrics that have been made possible by the developments of the past 25 years are given.
TTD: 10-48

Jute research. Forward in jute; Trade Research Association's Plans. Anon. *Fibres 9*, 31-32 (Jan. 1948).

Plans of the British Jute Trade Research Association for the establishment of research laboratories are discussed briefly. Temporary quarters have been obtained and a research program is being drawn up. TTD: 10-48

Linen research. $2,000,000 on linen research. Anon. *Linens & Domestics 36*, 37 (Aug. 1948).

A brief notice of the opening of a new building extension for the Linen Industry Research Association at Lamberg, near Belfast, Northern Ireland, is given. Since its inception 30 years ago, the Association has spent about $2,000,000 on the research objectives of the Research Institute. The work was extended to include rayon in 1940. Present income exceeds $200,000 per annum, half supplied by the industry and the other half supplied by governments of Great Britain and Northern Ireland. The Association has 286 subscribing members. TTD: 10-48

Linen research. Linen industry research. Anon. *Fibres 9*, 67 (Feb. 1948).

The Linen Industry Research Assoc., in its annual report to members, has announced progress in its study of retting. A study of flax spinning that has been in progress for a number of years for the Ministry of Supply is nearing completion. This study is concerned with the relation between fiber properties and yarn quality. TTD: 10-48

Photography in textiles. Photography in the study of fibres and textiles. C. W. Bradley, Brit. Cotton Industry Research Assoc. *Fibres 9*, 16-18 (Jan. 1948), 45-9 (Feb. 1948), 95-8 (Mar. 1948), 138-41 (Apr. 1948).

This series of 4 articles discusses the equipment and techniques of photography in the study of processes, fibers, and textiles. The use of visible light, fluorescence, x-rays, and infra-red photography are reviewed. The photography of motion by means of high- speed flash photography and high-speed motion picture photography are considered in the final article. TTD: 10-48

Research. Research for profit. T. S. Taylor, U. S. Testing Co. *Textile Colorist 70*, 28, 61 (May, 1948); 33, 57 (June, 1948).

The value of fundamental and applied research is discussed. The small company as well as the large company can benefit from research programs. TTD: 10-48

Terms and definitions. Textile terms and definitions. Anon. *J. Textile Inst. 38*, P615-28 (Dec. 1947).

A list of textile terms and definitions recommend-

ed as standard, and also a number of tentative ones, is given. The terms range from "Bast fibre" through "Woollen". The work is that of a Committee appointed by the Council of the Textile Institute. Previous tentative lists were published in *J. Textile Inst. 33*, P51-2 (May, 1942) and P103-05 (Nov. 1942).

Textile education. Dan River's educational program. Anon. *Am. Wool Cotton Reptr 62*, 13-14, 19 (Apr. 1, 1948).

The Dan River Mills maintain 2 fully equipped textile schools to teach employees to perform their jobs more effectively and with better understanding. Six main branches of vocational training are offered. TTD: 10-48

Textile education. Wool education; survey of existing facilities. P. A. Wells, International Wool Secretariat. (From an address given at the Assoc. of Applied Biologists at the Imperial College of Science, South Kensington, England, April 23). *Fibres 9*, 210-12 (June, 1948).

The facilities in England for training personnel in the science and technology of wool and its manufacturing processes are described and discussed. There are considerable facilities available, although certain deficiencies exist. TTD: 10-48

Textile education. Textile courses revised at North Carolina State. Robt. Freeman. *Textile World 98*, 135, 218 (Aug. 1948).

A revision in the curriculum in the School of Textiles at North Carolina State College, effective September 1948, provides for 2 basic courses, namely, textile manufacturing and textile chemistry and dyeing. Provision is made for selection of optional courses, and increased emphasis is placed on synthetics. Courses on instrumentation, chemical testing of fibers, colloid chemistry, etc., are added. Yarn manufacturing is taught functionally.
LCL TTD: 10-48

Textile laboratory. New Stevens Laboratory insures fabric quality. Wm. A. Newell. *Textile World 98*, 100-03 (Aug. 1948).

The new control laboratory of J. P. Stevens & Company in New York City contains the most modern equipment available. A staff of 20 is engaged in physical testing, serviceability testing, dyeing, chemistry, and microscopy for the mills and the sales department. Photographic equipment is used in many phases. Modern lighting and air conditioning are used throughout.
LCL TTD: 10-48

Textile research. Gearing toward better textiles.

J. Robt. Bonnar, Gen. Dyestuff Corp. *Am. Dyestuff Reptr. 36,* 765-66, 774 (Dec. 29, 1947).

The objectives, plans and accomplishments of the executive research committee of the American Association of Textile Chemists and Colorists are reviewed.

WPU,jr. TTD: 10-48

Textile research. Textile research gains stature. Ward Delaney, Inst. of Textile Technology. *Am. Wool Cotton Reptr. 61,* 17-18, 20 (Oct. 16, 1947).

The need for increased research and education is stressed in a discussion of research activities in the cotton industry. The aims and projects of the Institute of Textile Technology are described. TTD: 10-48

Textiles. Textiles in rubber industry. Anon. *Am. Wool Cotton Reptr. 62,* 51, 53, 55, 65 (Mar. 11, 1948).

As a result of intensified research, three new products, Carosel, Strex, and Ustex are being produced on machinery that has been released because of the change from cotton to rayon tire cord. The new products and tire cord production are discussed briefly. TTD: 10-48

Wool research. Four-year wool research program. Anon. *Am. Wool Cotton Reptr. 62,* 11-12 (July 22, 1948).

Plans for a four-year program of internationally sponsored fundamental research into the physical and chemical properties of wool at the Textile Research Institute are discussed. TTD: 10-48

IMPROVEMENT OF JUTE BAGS FOR STORAGE OF SUGAR. P. B. Sarkar and H. Chatterjee. Technological Research Memoir, No. 11. Indian Central Jute Committee. Price 1s.

Reviewed in *Fibres 9,* 152 (Apr. 1948). TTD: 10-48

INTERNATIONAL INDUSTRY YEARBOOK (1948). Edited by Lloyd J. Hughlett. Kristen-Brown Publishing Co., New York, 1948; 416 pp.; price $10.00.

Reviewed in *Textile Research J. 18,* 441 (July, 1948). TTD: 10-48

TEXTILE SCIENCE; AN INTRODUCTORY MANUAL. J. T. Marsh. London, Chapman & Hall, Ltd., 1948. 32s.

Reviewed in *Fibres 9,* 238-39 (June, 1948). TTD: 10-48

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